



4th World Small-Scale Fisheries Congress

Proceedings

4WSFC Africa:

"Leading by Examples: Leaderships in Sustainable Small-Scale Fisheries"

November 20-23, 2022

Cape Town, South Africa

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Table of Contents

Day 1	4
Day 2	4
Day 3	13
Day 4	27
Individual abstracts	38

CONGRESS PROGRAM

SUNDAY, NOVEMBER 20th – DAY 1

World Fisheries Day and IYafa 2022 Celebration

COMMUNITIES & FISHERS FORUM

Sunday, November 20th

Location: Space Café @ Hout Bay

MONDAY, NOVEMBER 21st – DAY 2

REGISTRATION

Monday, November 21st, 8:00– 9:00

OPENING REMARKS/WELCOME SPEECH PLUS "Celebration of Life & Work of Paul Onyango"

Monday, November 21st, 9:00– 10:00

Location: Atlantic Suite

PLENARY SESSION #1 – Leaders in ACTION RESEARCH

Monday, November 21st, 10:00 AM– 12:00 PM

Location: Atlantic Suite

Chairs:

- Moenieba Isaacs, Institute for Poverty, Land and Agrarian Studies (PLAAS), South Africa
- Shehu Latunji Akintola, University of Lagos, Nigeria

Speakers:

- Philile Mbatha, One Ocean Hub Small-scale Fisheries Research Project, University of Cape Town, South Africa
- Aliou Sall, CREDETIP, Senegal
- Carmen Mannarino, Masifundise, South Africa
- Amadou Tall, PESCAO /ECOWAS, Nigeria

Discussants:

- Friday Njaya, Department of Fisheries, Malawi

- Prateep Nayak, University of Waterloo, Canada

There are no other sectors needing “action research” more than small-scale fisheries, given their marginalization from policy and decision-making process, how they are disadvantaged in discussion about economic development, and how their contributions are often dismissed because of the lack of data about them. But it is also within small-scale fisheries that great examples of action research can be found, revealing the strength, capacity and potential of small-scale fisheries and the core values they bring to the communities and the society as a whole. This session highlights some of these examples, but the main aim is to learn more about other good examples of action research that take place in the continent from the participants. Through stories and experience sharing, we hope to learn about key elements for successful action research initiatives and identify areas where more attention is needed.

LUNCH (12:00-13:15)

PLENARY SESSION #2 - Leaders in BLUE JUSTICE

Monday, November 21st, 13:15 - 15:15

Location: Atlantic Suite

Chairs:

- Jemimah Etonnam Kassah, University of Education, Ghana
- Aliou Sall, CREDETIP, Senegal

Speakers:

- Jemimah Etonnam Kassah, University of Education
- Ghana
- Almas Mazigi, Dar es Salaam University, Tanzania
- Katrina Hilundwa, BCC, Namibia
- Wilmien Wicomb, Legal Resources Centre, South Africa

Discussants:

- Shehu Latunji Akintola, University of Lagos, Nigeria
- Svein Jentoft, UiT The Arctic University of Norway

Blue Economy and Blue Growth (BE-BG) are becoming increasingly important in national and regional public policies around the world. This is supported by

the technical and financial partners of African states in the framework of bilateral and multilateral development cooperation, private financial institutions are also involved. While they are part of an exclusively business logic, with the sole objective of maximizing profits by monetizing the multiple and diverse services provided by the oceans, Blue Justice is part of a diametrically opposed dynamic by focusing on the issue of human rights and social justice in the context of SSF. To this end, the concept of “Blue Justice” has become a counter-narrative, denouncing the various forms of injustice suffered by fishers, including their marginalization and exclusion from the decision-making process behind the development of public fisheries policies on the continent. The 2030 Agenda for Sustainable Development, in particular Sustainable Development Goal (SDG) 14 “Life under water”, would only be a declaration of good intentions if these injustices listed in the glossary published by TBTI [<http://toobigtoignore.net/blue-justice-glossary/>] are not taken into account, in order to put the social dimension including the whole cultural value specific to fishers, back at the heart of public fisheries policies. It is in this perspective that the Regional Congress for Small-Scale Fisheries in Africa, in a transdisciplinary approach, offers a space to people involved in small-scale fisheries, across various disciplines to discuss in a concrete way the injustices as experienced in their different socio-cultural contexts, and how this is detrimental to their rights to livelihoods and wellbeing, in addition to the exchange of experiences, we expect concrete proposals from the participants with the aim of developing an agenda for collective action, and which would be specific to the issue of Blue Justice as a follow-up to the Cape Town Congress. In the implementation of this agenda, whatever the nature of the action carried out, it will be in tandem with working to ensure that the Blue justice dimension is fully taken into account in the narrative of “BE-BG”.

BREAK (15:15-15:45)

Parallel session #1.1 - Implementing the Small-Scale Fisheries Guidelines in Sub-Saharan Africa

Monday, November 21st, 15:45 - 17:15

Location: Atlantic I

Chair/Moderator:

- Alushe Hitula
- Lena Westlund

Speakers:

- Alushe Hitula
- Amenye Banda
- Lilian Ibengwe
- Suzanne Njeri

The Food and Agriculture Organization of the United Nations (FAO) is supporting the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines) through an FAO SSF Umbrella Programme and initiatives at global, regional, and national levels. One goal is to support participating member countries to develop a National Plan of Action for Small-Scale Fisheries (NPOA-SSF) as a response to the commitment to implementing. There is also a sub-programme with a particular focus on women, particularly in the post-harvest sector. The Benguela Current Convention (BCC) Secretariat is implementing a project titled Enhancing climate change resilience in the Benguela Current Fisheries System, combining efforts by the BCC, Angola, Namibia and South Africa, FAO, and the Global Environmental Facility (GEF). The project aims to build resilience and reduce the vulnerability to climate variability and change of the marine small-scale fisheries within the BCLME through strengthening adaptive capacities and implementing participatory and integrated strategies in order to ensure food and livelihood security. This proposed session will showcase experiences and lessons learnt from countries that are supporting SSF Guidelines implementation or supporting a process towards improving the recognition and realisation of the small-scale fisheries sector. The session will consist of presentations by government, small-scale fisheries and research representatives from selected Sub-Saharan African countries that are part of the FAO, BCC or national initiatives and subsequent panel discussions and Q&A with the audience.

Parallel session #1.2 - Building Climate Resilience and Adaptive Capacities in Small-Scale Fisheries and Aquaculture in Southern Africa

Monday, November 21st, 15:45 - 17:15

Location: Atlantic II

Chair/Moderator:

- Motseki Hlatshwayo, SADC,
- Nico Willemse, BCC

Speakers:

- Sloans Chimatiro, Malawi
- Ipeinge Mundjulu, Namibia
- Joao de Carvalho, Angola
- Abdenego Silva, Angola
- Katrina Hilundwa, Namibia
- Elethu Duna, Namibia
- Caitlynn Francis

All SADC Member States are Parties to the United Nations Framework Convention on Climate Change (UNFCCC) and have endorsed the Paris Climate Agreement (PCA). The key objective of the PCA is to keep a global temperature rise this century well below 2 degrees Celsius above preindustrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Based on recent outputs by the Inter-governmental Panel on Climate Change (IPCC), and as confirmed by SADC countries, southern Africa is one of the most vulnerable regions in the world to the effects and impacts of climate change. Member States submit Nationally Determined Contributions (NDCs) to the UNFCCC as country commitments to meeting the objective of the PCA. NDCs may not adequately address the plight of Small-Scale Fisheries and Small-Scale Aquaculture given the limitation of information and data to adequately understand the situation and make informed decisions for building adaptive and resilience capacities.

Climate change impact on water availability, the distribution of aquatic species, water chemistry and ecosystem balance, and the future availability of, and access to wild caught fish. Left unattended this could worsen existing food and livelihood insecurities, lower the positive impacts of fish-dependent local economies and lead to increased unemployment. Youth and women unemployment rates are high in SADC and were exacerbated by the economic downturns caused by COVID-19.

This session will discuss how as the region, SADC can strongly advocate for consultative evidenced-based climate change vulnerability assessments for these sectors and to craft viable, sustainable and scalable climate change adaptation options for small-scale fishers and aquaculture practitioners.

Parallel session #1.3 - Stewards of our Waters and Seas: Time to Recognize and Support Small-Scale Fishers B2:G6

Monday, November 21st, 15:45 - 17:15

Location: Courtyard I

Organizers:

- Global Network for the Right to Food and Nutrition
- Masifundise
- FIAN International

Chair/Moderator:

- Sibongiseni Gwebani, Masifundise

Speakers:

- Ibrahima Thiam, Rosa Luxemburg Foundation
- Stefania Tripodi, Office of the UN High Commissioner for Human Rights
- Fisher Organization CAOPA
- Yifang Tang, FIAN

The right to food and nutrition (RtFN) of the world's fisher people is intrinsically connected to several human rights, such as their right to health, water and sanitation, to the right to education of their children, to the right to a clean, healthy, and sustainable environment, as well as to their right to culture. Their human rights are, however, increasingly challenged, abused, and violated due to ocean and water grabbing, pushed by the blue economy.

In underlining the role of the small-scale fishers worldwide in contributing not just to the RtFN of their own, but to millions of other rural populations, this year's Right to Food and Nutrition Watch dedicates to highlighting the global need to recognize and support the small-scale fishers worldwide. This session aims to answer, among others, how the international community can contribute to the realization of fisher people's RtFN.

**Parallel session #1.4 – Lessons in innovative tools and approaches -
Contributed papers**

Monday, November 21st, 15:45 - 17:15

Location: Courtyard II

Chair:

- Isaac Nyameke

Contributions from individual papers.

Speakers:

1. Cornelia Nauen - Empowerment of small-scale fishers can take many forms
2. Iddrisu Salifu - The impact assessment of social protection services and improved fish smoking technology on small-scale fisherfolks' livelihood in Ghana
3. Lufefe Sopazi - Women in the Fisheries Ecosystem: An Evaluation of the Small-Scale Fisheries Industry at Hamburg Coastline, Eastern Cape
4. Isaac Nyameke - Enhancing Small Scale Fisheries Cross Border Trade Barriers among African Countries. Recommended Innovative Tools and Approaches
5. Qurban Rouhani - South Africa's Inland Fisheries Policy - will it deliver relief for small-scale fishers?
6. Patrick Kawaye Chimseu - Designing digital marketing tools for small-scale fish traders in Malawi

Parallel session #1.5 – Identifying exemplary case studies and good practices in African small-scale fisheries [VIRTUAL ONLY]

Identifying exemplary case studies and good practices in African small-scale fisheries: a bottom-up, action-research approach to bridge data gaps and improve sustainability

Organizers:

- Shehu L. Akintola
- Kafayat A. Fakoya
- Foluke O. Areola

Speakers:

- Foluke Omotayo Areola
- Ayojesutomi Abiodun-Solanke
- Ayorinde A. Kappo
- Kafayat A. Fakoya
- Felicia Yetunde Eboka
- Agnes Onyejeochin Godwin
- Abdul Wakil Saba

This session seeks to present rich panel discussions of topics under the subthemes. The purpose is to identify exemplary case studies and good practices along the value chains which have been relatively unknown or under-reported. African small-scale fisheries are perhaps the most under-reported because of weak capacities of the fisheries institutions; poor valuations, linkages and recognition of intrinsic values and socio-economic contributions in national economies at the level of the policy makers despite the profound direct and indirect impact they exert at local levels. In many African countries, research on small-scale fisheries are highly contextualized, limited in scope with poor data at biological, environmental, social, economic and governance levels. Dearth of information and gaps in SSF require swift departure from the past where research was rigidly conceived, planned and implemented using top-bottom approach, minimal consultations for sharing and eliciting feedback on research findings with fishers, fish workers or communities. Beyond the rhetorical embellishment of fish as food, a first step towards cost-effective, adaptive action-research requires transdisciplinary and bottom-up approach where inclusivity and documentation of the rich but untapped traditional/ local knowledge base in fisheries governance, taxonomy and ecology of fishes, fishing practices, fish preservation and processing, management and conservation measures, utilization of fish in medicinal, cultural, tourism and recreation contexts will help advance the frontier of SSF sustainability.

BREAK (17:15-17:30)

POLICY FORUM

Monday, November 21st, 17:30 – 19:00

Location: Atlantic Suite

Organizers:

- Ahmed Khan, AfDB
- Motseki Hlatshwayo, SADC

Panelists:

- Neeraj Vij, AfDB
- Bernice Mclean, NEPAD
- Honorable Dr. Paubert Mahatante, Madagascar
- Xinhua Yuan, FAO

- Samantha Petersen, WWF
- Mutinta Hambayi, WFP
- Shakuntala Thilsted, WorldFish
- Rashid Sumaila, UBC

The African Development Bank (Blue Economy Flagship) in partnership with SADC Secretariat (ProFishBlue Project), Rome-based agencies, WorldFish, and AU-IBAR aims to celebrate World Fisheries Day during a Policy Forum on the theme: Leading by Excellence - From policy and strategy to action and impact. Given the wicked problems in fisheries and the complex policy process and governance challenges, what could excellence in leadership look like towards prioritizing aquatic foods as well as supporting fish value chains for its impact on food-livelihoods-trade nexus.

Some policy entry points along the fish chain include: an ecosystem approach, community rights, diets and nutrition, overfishing, IUU, markets, output infrastructure, access to finance, environmental safeguards, labour codes, quality infrastructure and standards, high import bill, post-harvest utilization, cross-border trade and ACTFA, blue justice, social inclusion, viability and livelihood security, regional integration, resilience building, MC&S, to name a few.

The session engages a round table dialogue with policy makers and practitioners at multiple governance scales on how to set triggers towards policy reforms and strategic action for transformative change. Examples will include policy-based operations, investment projects, transboundary regional governance, and community-based planning.

Congress Reception

Monday, November 21st, 19:30 – 21:30

Location: Captains lounge, Lagoon Beach Hotel

PLENARY SESSION #3 – Leaders in CLIMATE-FRIENDLY FOOD SYSTEM

Tuesday, November 22nd, 08:30 – 10:30

Location: Atlantic Suite

Chairs:

- Katrina Hilundwa, BCC, Namibia
- Esther Fondo, Kenya Marine and Fisheries Research Institute, Kenya

Speakers:

- Alushe Hitula, FAO, Namibia
- Morine Mukami Ngarari, Kenya Marine and Fisheries Research Institute, Kenya
- Richard Nyiawung, University of Guelph, Canada
- Mafaniso Hara, Institute for Poverty, Land and Agrarian Studies (PLAAS), South Africa

Discussants:

- Sloans Chimatiro, Policy Research Network for Fisheries & Aquaculture / private consultant, Malawi
- Milena Arias Schreiber, University of Gothenburg/ University of Santiago de Compostela, Spain; Sweden/Peru

Food and climate change are generally treated as separate issues in the global context with food production being one of the largest emitters of GHGs in the world. This encompasses emissions from the production, processing, packaging, transport, storage, consumption, and disposal of food. It is an opportune time to re-think and improve access to and viability of aquatic foods in the aquatic system. This means changing food production and consumption and reducing global greenhouse gas emissions by at least 10.3 billion tonnes a year to prevent catastrophic climate change for future generations. Recommendations include paying attention to the important role small-scale fisheries and small-scale aquaculture food producers play in a climate-friendly food system.

It has become a golden opportunity for African countries to play an important role as “LEADERS in CLIMATE-FRIENDLY FOOD SYSTEM”. This a step in the right direction, as many good lessons already exist in the blue system from the

continent that aims to promote more sustainable, locally-led blue initiatives such as simpler land-based aquatic farming systems, that are less emission-intensive yet provide diversified livelihood security in the world of changing diets, food-linked deforestation, overfishing, and food waste.

This Plenary Session will discuss how Africa is strongly leading through myriad opportunities to use “Climate-Friendly Food System” reforms to contribute to a range of blue growth benefits. Such benefits include improved population health, improved post-harvest management and technologies, sustainable job creation, and wider environmental benefits such as carbon sequestration and restoration of aquatic biodiversity and habitats. The discussion will be based on lessons-learned and practical solutions from the continent on approaches and initiatives that aim to build climate resilience results in a diversity of context-specific friendly and viable solutions in the blue world.

BREAK (10:30 – 11:00)

PLENARY SESSION #4– Leaders in BUSINESS & SOCIAL INNOVATION

Tuesday, November 22nd, 11:00 – 13:00

Location: Atlantic Suite

Chairs:

- Katrina Hilundwa, Namibia
- Ahmed Khan, AfDB

Speakers:

- Ahmed Khan, AfDB
- Samantha Petersen, WWF
- Serge Raemakers, Abalobi
- Mohamed Seisey
- Harrison Karisa, World Bank
- Alex Keffi, SADC
- Lisa Mazealini, SA
- Ana Menezes
- Daniel Segura

Fisheries play significant economic, social and nutritional roles on the African continent. The sector’s positive impact on livelihoods and employment is expected to grow through enhanced productivity and infrastructure development, competitiveness, and increased economic returns across the

value chain It is estimated that fisheries and aquaculture directly contribute \$24 billion to the African economy, representing approximately 1.3% of the total African GDP. Despite six (6) large marine ecosystems and transboundary lakes and rivers, the continent's consumption of fish is the lowest in the world, about half the global average of 20 kg per capita and less than the WHO recommendation of 15 kg per capita. Thus, investment and innovation is key to successfully scale out models of best practices in fisheries and aquaculture development.

The African Development Bank (Blue Economy Flagship under Feed Africa) in partnership with WWF and SADC (PROFISHBLUE project) aims to support IYafa implementation on the theme 'Catalyzing investment and innovation in fish supply chains through effective financing instruments'. Investing in robust production systems is imperative for the African Union Year of Nutrition (2022) and to ensure multiple goals in the transformation of fish value chains. Thus, investments will continue in this sector facilitated by the low cost of production, low carbon footprint, high economic returns, access to healthy diets, established research support and a development narrative (food-livelihood-trade nexus). The session is organized to better understand the evolution of financing tools, social innovation and synergize efforts toward more effective and efficient investment by showcasing best practice models.

LUNCH (13:00 – 14:15)

Parallel session #2.1 - Supporting the implementation of the SSF Guidelines: launching of FAO eLearning courses

Tuesday, November 22nd, 14:15 – 15:45
Location: Atlantic I

Chair/Moderator:

- Lynn Jackson, IOI-SA

Speakers:

- Nicole Franz, FAO
- Lynn Jackson, IOI-SA
- Lena Westlund, FAO
- Kashiefa Parker, IOI-SA
- Elisa Morgera, One Ocean Hub
- Ana Suarez Dussan, FAO

The session is jointly organized by the International Oceans Institute Southern Africa (IOI-SA) and the Food and Agriculture Organization of the United Nations (FAO). It will be focused around the launch of an e-learning course which has been developed over the past year as part of a broader project to build capacity and promote implementation of the Voluntary Guidelines to Secure Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines).

FAO and its partners provide technical support and develop guidance for the implementation of the SSF Guidelines. Together with IOI-SA, FAO has designed training courses and materials, including the e-learning on governance of small-scale fisheries and the implementation of the SSF Guidelines. This e-learning is intended for government officials as well as other stakeholders including small-scale organizations, researchers and NGOs. It discusses the characterization and importance of small-scale fisheries; the relevant legal and policy frameworks; the principles, concepts and approaches to small-scale fisheries governance; the implementation of a human rights-based approach in the context of the SSF Guidelines; and the enabling environment needed for inclusive and collaborative governance.

This session will contribute to promoting the implementation of the SSF Guidelines in 2022, which was designated as the International Year of Artisanal Fisheries and Aquaculture (IYAFA) by the United Nations General Assembly.

Parallel session #2.2: The Vulnerability To Viability Approach: Conceptual, methodological and practical considerations for building strong small-scale fisheries [Part I]

Tuesday, November 22nd, 14:15 – 15:45

Location: Atlantic II

Organizers:

- Alida Bundy, DFO, Canada
- Prateep Nayak, University of Waterloo, Canada

Speakers:

- Friday J. Njaya, Department of Fisheries, Malawi
- Shehu L. Akintola, University of Lagos, Nigeria
- Khady Yama, WASCAL/UCAD, Senegal
- Evans Kwasi Arizi, University of Cape Coast, Ghana
- Moenieba Isaacs/Mafa Hara, Institute for Poverty, Land and Agrarian Studies (PLAAS), South Africa

Small-scale fisheries are often characterized as vulnerable, and their viability is a key issue in fisheries governance given their diverse contributions to economy, environment and society. However, vulnerability and viability are hard to define. Moreover, these concepts have almost always been treated independently, and the inherent linkages between vulnerability and viability have largely remained unaddressed. We use “Vulnerability To Viability (V2V)” as a novel approach and conceptual framing to highlight their interconnected nature and the potential for vulnerable small-scale fisheries to transition towards viability. As such, we recognize V2V as a process that is multidimensional, complex, highly dynamic, and relative, the study of which needs to be inter- and transdisciplinary.

This double session will focus on the theoretical and methodological foundations of Vulnerability to Viability (V2V) as an emerging concept and generate some initial directions to understand ‘what factors result in vulnerability and which lead to viability in small-scale fisheries, and what are the means through which small-scale fisheries can transition from vulnerability to viability?’ We propose that while in-depth research is required to adequately probe these questions in any given context, much can be gained from a comparative view across multiple contexts with various challenges, strengths and adaptive capacities. Where do we see similarities and where are the differences across these different contexts? What lessons can be learned from successful (and unsuccessful) responses to change and how can they be applied elsewhere?

In this session, researchers from the V2V Global Partnership, including graduate students, working in Africa SSF sector will present papers focusing on the various dimensions of the Vulnerability to Viability (V2V) approach and provide conceptual, methodological and practical directions on how small-scale fisheries systems can transition from vulnerability to viability. Conceptually, the session will emphasize that while small-scale fisheries will continue to remain vulnerable to multiple challenges (e.g., climate change), building on their existing strengths may be an effective strategy to increase viability, and that further conceptual development of the V2V approach is essential in this regard. Methodologically, researchers from the V2V Global Partnership will present papers applying the I-ADApT template to their detailed V2V SSF case studies to explore questions concerning vulnerability, viability and adaptive responses to foster a V2V transition. An interactive segment of the session will focus on the practice and policy implications of the V2V transition through comparisons, analysis and discursive interaction. An introductory paper will be presented by the session organizers. This session is hosted by V2V Global Partnership (<https://www.v2vglobalpartnership.org/>).

Parallel session #2.3: Supporting multi-scale management of mud crab fisheries in Madagascar through action research

Tuesday, November 22nd, 14:15 – 15:45

Location: Courtyard I

Organizers:

- Marc Leopold, IRD (French Research Institute for Sustainable Development)
- Alexandre Leoville, Océa'Consult, La Réunion

Speakers:

- Viviane Givene Expresse, RENAFEP (National network of women in fisheries in Madagascar)
- Jamal Mahafina, IH.SM, University of Toliara
- Thierry Razanakoto, CERED, University of Antananarivo
- Marc Leopold, IRD, France
- Alexandre Leoville, Océa'Consult, La Réunion

The session is introduced by a 10' video on the context and the wicked problems in mud crab fisheries in Madagascar and the work undertaken to address them since 2019 as part of the CORECRABE European action-research project (<http://corecrabe.ird.fr/>). Based on their own experience, the first and second speakers will then explain (10' each) the role and interest of the fishery sector and the national network of women in fisheries in Madagascar (RENAFEP), respectively, in participating in both the fishery monitoring and the discussion process through the four regional multi-stakeholder working groups that were established by the project. The following speaker (10') will describe the participative and collaborative information system that has been deployed since 2021 to address recurrent data-deficiency issues, build technical and scientific capacities, and provide accurate fishery indicators (e.g., size structure, fisher census, catch per unit of effort) to the working groups. As part of the blue justice agenda in small-scale fisheries, the 4th speaker (10') will present the market-driven mechanisms that have driven fishing effort throughout the value chain and how these mechanisms may be affected by fishery governance and export rights. The 5th presentation (10') will further analysis those mechanisms through an empirical bioeconomic model for predicting the impacts of the local purchase price (i.e., « vessel price ») of mud crab on the stock dynamics and the fishers' socioeconomic benefits. The final speaker will broaden the scope of both the research and action by highlighting users' rights in the mangroves and mapping mud crab fishing

patterns. A short conclusion will highlight the main lessons learnt from that transdisciplinary action research approach that may inform other research-based interventions in small-scale fisheries and contribute to the implementation of the SSF Guidelines in African countries.

Parallel session #2.4: Lessons from South Africa & the Continent - Contributed papers

Tuesday, November 22nd, 14:15 – 15:45

Location: Courtyard II

Chair: Neville Suh

Contributions from individual papers.

Speakers:

1. Amos Barkai - Mobile electronic recording and reporting application for artisanal and commercial fishing fleets - OlracMDDL
2. Sunday Imikendu Imbwae - The Dilemma and Prospects for Transboundary Fisheries Management in Kavango-Zambezi Transfrontier- Conservation Area (KAZA)
3. Martin Purves - Community Catch: a market-based standard for sustainable small-scale fisheries
4. Andrew Gordon - Supporting the environmental sustainability ambitions of small-scale artisanal fisheries – initiatives by the Marine Stewardship Council
5. Jeremias Francisco Intchama - Study of the selectivity of gillnets used in small-scale fishing in the rivers of Guinea-Bissau
6. Tetsu Sato - Transdisciplinary collaborative leadership for collective actions toward sustainable small-scale fisheries: A case study on the co-creation of an artificial fishing reef in Lake Malawi

Parallel session #2.5: [VIRTUAL ONLY] – Is the African Union Blue Economy Strategy guideline a threat to the Small-Scale Fisheries and Coastal Communities in Africa

Organizer:

- Isaac Nyameke

Speakers:

- Grace Andrew
- Cathy Nazziwa
- Dhahbi Souleima
- Amadou Biteye
- Isaac Nyameke

Since the conception of the term “Blue Economy (BE)” in June 2012 at the Rio+20 United Nations Conference on Sustainable Development in Rio de Janeiro, Brazil. Many countries around the world namely Canada, Seychelles, Kenya among others are developing their Blue Economy Strategy. To ensure that the African continent benefits from its ocean resources, the African Union in 2018 developed an African Union Strategy as a guide for member states. This section examines the African Union Strategy guideline documents on how it would be a threat or benefit to small scale and coastal communities in African in line with blue justice. Fisheries graduate students from African countries will present on the African Union Blue Economy guideline in relation to their countries marines sector development. The outcome of the discussions would inform the policy makers to consider blue justice in their blue economy development.

BREAK (15:45 – 16:00)

Parallel session #3.1 - Illuminating Hidden Harvests: the contribution of small-scale fisheries to sustainable development in Africa

Tuesday, November 22nd, 16:00 – 17:30

Location: Atlantic I

Chair/Moderator:

- Lena Westlund, FAO

Speakers:

- Godfred Ameyaw Asiedu
- Djiga Thiao
- Chikondi Manyungwa-Pasani
- Jeppe Kolding
- Maria del Mar Mancha-Cisneros
- Giulia Gorelli

As a contribution to the celebrations of the International Year of Artisanal Fisheries and Aquaculture, this session will present on the Illuminating Hidden Harvests (IHH), with a focus on Africa. IHH is a global initiative of FAO, Duke University, and WorldFish to generate and disseminate new evidence about the benefits, interactions and impacts of small-scale fisheries to inform policy and practice.

The initiative helps to inform all levels of policy-making processes and contributes to empowering fishing communities, their organizations, and advocates to make a strong case for productive, sustainable and equitable small-scale fisheries. In this way, the IHH initiative supports the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication and progress towards the UN's Sustainable Development Goals.

A key output of the IHH initiative is a major report, which provides a snapshot of the diverse contributions of small-scale fisheries globally. For this, IHH estimated a set of indicators on social, economic, and environmental dimensions, including nutrition and food security, gender equality, as well as governance issues around small-scale fisheries. Data was obtained using a tapestry of approaches, including: 58 country case studies, ad hoc questionnaire sent to FAO member countries and territories, available global/regional/national datasets. In addition, for important topics for which global, quantitative figures were not relevant or available, a series of thematic studies was conducted.

IHH team members, IHH technical advisory group members and country case study authors will participate in the session and share findings and experiences related to the preparation of the study, with a focus on Africa.

Parallel session #3.2 - The Vulnerability To Viability Approach: Conceptual, methodological and practical considerations for building strong small-scale fisheries [Part II]

Tuesday, November 22nd, 16:00 – 17:30

Location: Atlantic II

Organizers:

- Alida Bundy, DFO, Canada
- Prateep Nayak, Univeristy of Waterloo, Canada

Speakers:

- Vannessa Warren, University of Malawi - The Polytechnic, Malawi
- Tracey Lee Dennis, PLAAS, South Africa
- Sisir Kanta Pradhan, University of Waterloo, Canada
- Md. Ruyel Miah, University of Waterloo, Canada
- Deo Namwira, University of Manitoba, Canada
- Foluke Omotayo Areola, Lagos State University, Nigeria
- Yinji Li, Tokai University, Japan

Small-scale fisheries are often characterized as vulnerable, and their viability is a key issue in fisheries governance given their diverse contributions to economy, environment and society. However, vulnerability and viability are hard to define. Moreover, these concepts have almost always been treated independently, and the inherent linkages between vulnerability and viability have largely remained unaddressed. We use “Vulnerability To Viability (V2V)” as a novel approach and conceptual framing to highlight their interconnected nature and the potential for vulnerable small-scale fisheries to transition towards viability. As such, we recognize V2V as a process that is multidimensional, complex, highly dynamic, and relative, the study of which needs to be inter- and transdisciplinary.

This double session will focus on the theoretical and methodological foundations of Vulnerability to Viability (V2V) as an emerging concept and generate some initial directions to understand ‘what factors result in vulnerability and which lead to viability in small-scale fisheries, and what are the means through which small-scale fisheries can transition from vulnerability to viability?’ We propose that while in-depth research is required to adequately probe these questions in any given context, much can be gained from a comparative view across multiple contexts with various challenges, strengths and adaptive capacities. Where do we see similarities and where are the differences across these different contexts? What lessons can be learned from successful (and unsuccessful) responses to change and how can they be applied elsewhere?

In this session, researchers from the V2V Global Partnership, including graduate students, working in Africa SSF sector will present papers focusing on the various dimensions of the Vulnerability to Viability (V2V) approach and provide conceptual, methodological and practical directions on how small-scale fisheries systems can transition from vulnerability to viability. Conceptually, the session will emphasize that while small-scale fisheries will continue to remain vulnerable to multiple challenges (e.g., climate change), building on their existing strengths may be an effective strategy to increase

viability, and that further conceptual development of the V2V approach is essential in this regard. Methodologically, researchers from the V2V Global Partnership will present papers applying the I-ADApT template to their detailed V2V SSF case studies to explore questions concerning vulnerability, viability and adaptive responses to foster a V2V transition. An interactive segment of the session will focus on the practice and policy implications of the V2V transition through comparisons, analysis and discursive interaction. An introductory paper will be presented by the session organizers. This session is hosted by V2V Global Partnership (<https://www.v2vglobalpartnership.org/>).

Parallel session #3.3 - SSF and Blue Economy challenges in South Africa: Lessons in defending human rights and ocean well-being through extending the contours of inter-disciplinary collaborations

Tuesday, November 22nd, 16:00 – 17:30

Location: Courtyard I

Chair/Moderator:

- Jackie Sunde, One Ocean Hub Small-scale Fisheries Research Project, University of Cape Town, South Africa

Speakers:

- Christian Adams, The Collective, South Africa
- Fabian Mohammed, Green Connection, South Africa
- Jerry Mngomezulu, Community Leader and Environmental Practitioner, South Africa
- Ntsindiso Nongcavu, Coastal Links South Africa
- Merle Sowman, One Ocean Hub Small-scale Fisheries Research Project, University of Cape Town, South Africa
- Wilmien Wicomb, Legal Resources Centre, South Africa
- Philile Mbatha, One Ocean Hub Small-scale Fisheries Research Project, University of Cape Town, South Africa
- Taryn Pereira, Coastal Justice Network and One Ocean Hub, Rhodes University South Africa

The promotion of the Blue Economy in Africa has led to an increase in coastal and offshore developments including shipping, harbour construction, tourism and mining. In South Africa, a rapid increase in applications for prospecting and mining for minerals, as well as oil and gas exploration have raised grave concerns amongst small-scale fishers because of the impacts that these developments will have on their livelihoods and culture. In South Africa this year, with support from human rights legal groups, researchers and a diverse

range of civil society groups, small-scale, artisanal fishers have led the way in challenging these applications, turning to legal action to defend the ocean and protect their livelihoods and cultural rights.

This panel will bring together fishers, activists, researchers, academics and a legal practitioner and to share innovative and collaborative approaches that are emerging in the small-scale, artisanal fisheries across the fisher-science-legal interface in the context of the Blue Economy. The panel will explore the lessons learned from the resistance to these mining and extractive activities and how, through these processes and the new partnerships that are being forged, the linkages between human rights and ocean well-being are being illuminate

Parallel session #3.4 - Lessons from Madagascar - Contributed papers

Tuesday, November 22nd, 16:00 – 17:30

Location: Courtyard II

Chair/Moderator:

- Isaac Nyameke

Contributions from individual papers.

Speakers:

1. Tsitohotsy Emilien Razafindrakoto - Developing integrated and consensual fisheries management and governance through local participative science, consultation, restitution and involvement of local communities in Madagascar - Case of Mahajamba LMMA
2. Tahiry Randrianjafimanana - Developing innovative conservation model for engaging people to participating in small scale fisheries management in Madagascar
3. Miarisoa Lalaina Rakotonaivo - Community-based marine resource management: an approach to promote marine biodiversity conservation and enhance human well-being
4. Jean Berthieu Nomenjanahary - Building a model for community-based fisheries management and conservation in Madagascar, case of Barren isles Madagascar's largest marine protected area

5. Stephanie D'Agata - Small-scale fishers socio-ecological vulnerability in southwest Madagascar

Parallel session #3.5 - [VIRTUAL ONLY] Doing Gender: Pushing the Boundaries on Gender Research in Small-Scale Fisheries

Organizers:

- Emma Rice
- Edith Gondwe

Speakers:

- Edith Gondwe
- Emma Rice
- Patrick Chimseu
- Editrudith Lukanga
- Kafayat Fakoya
- Ayodele Oloko
- Patrick Asango Okanga
- Ernest Chuku & Karen Kent
- Hillary Smith

Researchers, policymakers, NGOs, and funders working in small-scale fisheries are increasingly recognizing and responding to the need to produce and utilize sex-disaggregated data and other supporting information to understand and support women's role in small-scale fisheries (SSF). While this gender mainstreaming is an important first step, scholarship that pushes the boundaries of gender research and action in SSF is critical to pave the path to a more just and sustainable future. Leadership in sustainable SSF must continue to more deeply interrogate gender and its effects as a socially informed phenomenon. Each unique approach to gender research provides a different perspective on the social, economic, and political processes that shape current gender inequities in SSF. To develop effective policy interventions toward achieving gender equity in small-scale fisheries, as described in the 2014 SSF Voluntary Guidelines, nuanced findings from various gender approaches and at various scales must all inform one another. This session will explore the application of contemporary interdisciplinary dialogues on gender to SSF, address the question of how to reconcile various approaches to doing gender research in SSF, and identify frontiers in this field. This session, therefore, seeks innovative papers concerned with gender equity in SSF utilizing a range of unique approaches across all scales, from individual, household, or community level analysis to regional, national, or global studies. This session will serve as a platform to recognize the diverse insights of

different approaches at different scales of analysis in current SSF gender research and identify future directions in the field.

BREAK (17:30 – 17:45)

FUTURE LEADERS FORUM

Tuesday, November 22nd, 17:45 – 19:15

Location: Atlantic Suite

Moderators:

- Ratana Chuenpagdee, Memorial University, Canada; TBTI Global, Canada
- Ruyel Miah, University of Waterloo, Canada

Panelists:

- Tracey Lee Dennis, South Africa
- Neville Suh, Cameroon
- Vannessa Warren, Malawi
- Isaac Nyameke, Ghana
- Sisir Pradhan, India

There are many reasons why we need leaders. They provide vision for the future and help people reach their goals, utilizing their full potential. Leaders inspire, motivate transformation, and encourage cooperation. Small-scale fisheries never lack good leaders, and through their leadership, small-scale fisheries have persisted and, in many cases, thrived, serving as the bedrock for the community. Yet, with emerging challenges and uncertainty facing small-scale fisheries, it is best to be prepared. The Future Leaders Forum is the space to discuss about what needs to be considered and prioritized in moving forward. The session begins with perspectives from early career researchers about the future of small-scale fisheries and what they see as their role in supporting sustainable and viable small-scale fisheries. The floor will then be opened for more perspectives, comments and discussion.

Parallel session #4.1 - SSF-LEX: the new small-scale fisheries policy and legal database

Wednesday, November 23rd, 08:30-10:00

Location: Atlantic I

Chair:

- Ana Maria Suarez-Dussan, FAO

Speakers:

- Blaise Kuemlanguan
- Julia N. Nakamura
- Alessandra Tomasi
- Mostafa El Halimi
- Jackie Sunde
- Dienaba Beye

A legal and policy database entirely dedicated to small-scale fisheries has been developed by the Food and Agriculture Organization of the United Nations (FAO). This new database is called 'SSF-LEX', a subset of the FAOLEX database, which provides country profiles with information on the status of countries in relation to international legally binding instruments, constitutions, national laws, policies, and operational instruments relevant to the small-scale fisheries sector. SSF-LEX aims to be the main legal and policy database in support of the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines). Knowledge about the current national policy and legal frameworks is fundamental to further understand their alignment with the SSF Guidelines and identify good State practices and needs for improvements.

This session is dedicated to present SSF-LEX to a broad audience of people interested in small-scale fisheries in general, including fisheries managers, legal practitioners, scientists, academics, governments representatives, non-governmental stakeholders, fishers, and fishing communities

Parallel session #4.2 - Illuminating West and Central Africa's SSF Potentials

Wednesday, November 23rd, 08:30-10:00

Location: Atlantic II

Organizers:

- Richard A Nyiawung, University of Guelph, Canada
- Philip Loring, University of Guelph, Canada

Speakers:

- Richard A Nyiawung, University of Guelph, Canada
- Small-scale fisheries system in Cameroon: Changes, complexities and governance challenges
- Raymond K Ayilu, University of Technology Sydney, Australia
- Blue economy and SSF in Ghana & Women leading informal cross-border trade in West Africa
- Neville N Suh, Ege University, Turkey
- Dimensions for succession in the fish food system in West and Central Africa: Who are the leaders of tomorrow?
- Sarah Appiah, University of Ghana
- Livelihood shocks and coping strategies for small-scale women fishing actors in Ghana
- Ifesinachi Okafor-Yarwood, University of St Andrews, Scotland
- Maritime security and small-scale fishing around the Gulf of Guinea
- Fatou Mboob, TRY Oyster Women's Association, The Gambia
- Women leading SSF social innovation in West Africa's Blue economy

This session comprises scholars and practitioners engaged in action-driven research in West and Central Africa. Specifically, the session presents the different small-scale fishing activities championed by small-scale women fishing actors in the region. From oyster harvesting in The Gambia to shellfish co-management practices in Ghana and coordination of post-harvest and fish trade fishing activities in Cameroon, women are important actors in the fish value chain in West and Central Africa, leading small business initiatives and collective efforts to ensure sustainability and viability of the fisheries sector. In this session, presenters will present and discuss their different completed and ongoing research, highlighting the important contribution of small-scale

fisheries in West and Central Africa to food security, employment, and social well-being. The session aims not only to illuminate the importance of SSF in the region but also to present the different challenges fishing actors face and the need for intervention from actors at all levels. Theoretically, presenters will draw on concepts such as Sustainable Livelihood, Fish food system resilience, Governability, Social innovation, and Informal cross-border trade. Additionally, presenters will discuss and provide recommendations on the way forward for a sustainable and viable small-scale fisheries sector in West and Central Africa. Finally, the session has invited practitioners to present their stories on the successes and challenges of leading SSF enterprises in an uncertain environment.

Parallel session #4.3 - Leading Changes in Small-Scale Fisheries Governance: Lessons from Community-Led Transformative Social Innovation Initiatives in the Indian Ocean Region

Wednesday, November 23rd, 08:30-10:00

Location: Courtyard I

Organizers:

- Almas Mazigo, Dar es Salaam University College of Education (DUCE), Tanzania
- Johan Hattingh, Stellenbosch University, South Africa
- Mahmudul Islam, Sylhet Agricultural University, Bangladesh

Speakers:

- Almas Mazigo, Dar es Salaam University College of Education (DUCE), Tanzania
- Julius Mngumi, Dar es Salaam University College of Education (DUCE), Tanzania
- Johan Hattingh, Stellenbosch University, South Africa
- Mahmudul Islam, Sylhet Agricultural University, Bangladesh
- Sunil Santha, Tata Institute of Social Sciences, India
- Sariaka Rakotondrazafy, Impacting Lives through Opportunities (ILO), Madagascar
- Malasri Khumsri, Department of Fisheries, Bangkok, Thailand

Small-scale fisheries are vital in achieving quality lives and sustained livelihoods in island and coastal communities of the Indian Ocean region. An important prerequisite for securing sustainable small-scale fisheries, and guaranteeing small-scale fishers' access to coastal and marine resources and markets, is the establishment of fisheries governance systems which

acknowledge, respect and promote the rights and legitimate interests of small-scale fishers, island and coastal communities. The sad reality on the ground, however, is that fisheries governance systems dominant in local and national levels to a large extent tend to impede small-scale fishers from unlocking the socio-economic potentials of their fisheries. Nevertheless, small-scale fishers are not sitting idle but they engage in constant efforts to change unjust, unresponsive and ineffective fisheries governance regimes in their communities and nations. We have recorded evidence of community-led initiatives aiming at transforming the governance of small-scale fisheries in Bangladesh, India, Madagascar, South Africa, Tanzania and Thailand. We call such initiatives community-led transformative social innovation initiatives.

We will share examples and lessons on leading changes in small-scale fisheries governance through community-led transformative social innovation initiatives. In our panel presentations, we will highlight (i) the nature of small-scale fisheries governance envisioned and preferred by members of coastal communities, (ii) the conditions that led to the emergence of such transformative social innovations, (iii) the processes that their initiators followed to mobilize support, and the activities they embarked upon for effecting the envisioned transformations, (iv) dilemmas, complexities and contradictions that confronted their initiators when constructing alternative pathways, and their innovative approaches to negotiate and overcome them, and (v) the strategic approaches to implementing the identified transformative activities, and sustaining the outcomes attained.

Parallel session #4.4 - Accelerating Coastal Community-Led Conservation through a Sustainable Blue-Economy for Small Scale Fisheries

Wednesday, November 23rd, 08:30-10:00

Location: Courtyard II

Chair/Moderator:

- Lovasoa Dresy, WWF Madagascar

Speakers:

- Lovasoa Dresy, WWF Madagascar
- Paveen Ghalay, Finance Earth
- Santatra Razafindratsimba, WWF Madagascar
- John Kareko, SWIOTUNA
- Ahmed Kahn, African Development Bank

Investors and policymakers are increasingly turning to the ocean for economic opportunities and the ocean economy is forecast to double in size (Ocean Finance, 2020). However, unsustainable activities are eroding the natural capital on which the development of a sustainable economy depends and less than 1% of the total value of the blue economy has been invested in sustainable projects (Ocean Finance, 2020). The Sustainable Blue Economy provides social and economic benefits to local people; restores and protects productive marine ecosystems; and preserves natural resources through clean technologies, renewable energy and circular material flows. In the South Western Indian Ocean (SWIO) region, several partners are joining forces to ensure that economic activities along the coast and in the ocean are sustainable and meet the needs of dependent communities. This means putting coastal communities at the center of sustainable development efforts. This session aims to highlight the work of WWF and its partners to develop community-based bankable projects, associated finance mechanisms and Blue Incubators regionally. A review will be presented to showcase the 28 coastal community enterprises identified in the region that have the greatest potential to provide alternative or improved livelihoods for coastal communities. A range of financial (e.g. grant funding, seed investment) and non-financial (e.g. capacity building, technical assistance) tools will be discussed as a requirement to develop the coastal community enterprises to investment readiness. Participants will be also engaged in a discussion around the partnership models to be put forward to develop a successful regional Blue Incubator.

BREAK (10:00 – 10:30)

Parallel session #5.1 - Action Research – A Tool for Amplifying Women’s Voices in the Aquatic Food Systems

Wednesday, November 23rd, 10:30-12:00

Location: Atlantic I

Chair/Moderators:

- Suzanne Njeri, AWFISHNET
- Editrudith Lukanga, AWFISHNET

Speakers:

- Beyene A. Beyenne
- Lovin Kobusingye
- Julia Pembe
- Patricia Maisha

- Kasazi Nyendwa
- Sihem Hammad

In 2021, the African women fish processors and traders network (AWFISHNET) in collaboration with its partners (World Fish and Universities), conducted a study in 13 African countries to understand the impact of Covid 19 to the women fish processors and traders in the sub-Saharan Africa. The pandemic and accompanying containment measures implemented to reduce the spread of the virus have had deep and far-reaching impacts for women, men, households and communities engaged in food production and distribution.

Recovering from the COVID-19 crisis is considered by some as a window of opportunity to build a more inclusive and resilient food system and to address some of society's most concerning inequities. Investments, strategies and policy prescriptions to build forward better need to be gender-sensitive and gender-inclusive if they are to take the opportunity to progress equity and inclusivity—for example meeting and progressing the commitment made in SDG 5, CEDAW and provisions of the Small-scale Fisheries (SSF) Guidelines.

Given the focus on leadership during the congress, this session will enable AWFISHNET to share experiences and the recommendations that have been developed with and for women fish processors and traders across sub-Saharan Africa. The 10 recommendations that emerged from this Action research are for use by national government agencies, funders of national response strategies and nongovernmental organizations seeking to improve gender equity in fisheries and aquaculture, transform food systems toward greater resilience and equality and “build forward better” post-COVID-19.

These 10 recommendations are oriented to the immediate hardships women fish processors and traders and their families are experiencing, and to enable their adaptive capacity for the short and longer term, while also recognizing the pre-existing gender barriers in fish food systems, as well as human rights and food loss concerns.

Parallel session #5.2 - Improving data acquisition from small-scale/artisanal fisheries via low-cost systems using citizen science-based approaches

Wednesday, November 23rd, 10:30-12:00

Location: Atlantic II

Organizers:

- Umair Shahid, WWF Mozambique, Pakistan

- Shoaib Abdul Razzaq, WWF Mozambique, Pakistan
- Jawad Umer Khan, WWF Mozambique, Pakistan

Moderator:

- Umair Shahid, WWF Mozambique, Pakistan

Speakers:

- Alfredo Sfier, Shellcatch, Chile
- Eduardo Vidiera, WWF Mozambique, Mozambique
- Shoaib Abdul Razzaq, WWF-Pakistan
- Avelino Munwane, Mozambique
- Ghazi Salahuddin, WWF-Pakistan
- Jose Carlos Alvarez, WWF-Peru

The South West Indian Ocean (SWIO) region covers 15,000 km of the coastline stretching from Kenya, through Tanzania, Madagascar, Mozambique to South Africa, and remains one of the most significant biodiversity hotspots on the planet (Obura et al., 2017). Over 60 million people are employed in the artisanal/small-scale fisheries and industrial fishing sector in the region. Among the key commercial fish species, tuna and tuna like species such as shrimps and small pelagic remain extremely important to the growing economies of the SWIO countries. However, majority of the fisheries in the Indian Ocean, including the SWIO countries are largely data deficient. Around 50% of the tuna catch from the Indian Ocean is from small-scale sector and largely goes unmonitored (unreported) and remains a highly unregulated sector.

The issue is that the current systems in place in regional fisheries management bodies among others are not working for small-scale/artisanal fisheries sector as they cannot rely on an economic model based on licenses and fines as well as having fishers use the same tracking devices as the large-scale industrial fishing vessels. There is a clear need to have the data collection or monitoring, control and surveillance tools that are significantly low cost and/or affordable. Given the many challenges associated with the extensive nature of small-scale fisheries, there is a greater need to design current management platforms to ensure that they are able to provide data in a palatable manner and able to be scaled up and, most importantly, acceptable amongst fishers.

WWF, with the support of Norwegian Agency for Development Cooperation (NORAD), is currently implementing a 5-year 'Unlocking a Sustainable Blue Economy in the SWIO region' project whose aim is to accelerate towards achieving SDG14.4 to effectively regulate harvesting and end overfishing, illegal, Unreported and Unregulated fishing (IUU) and destructive fishing

practices and implement science-based management plans, in order to restore fish stocks in shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characters. In this regard, one of the desired outcome is that by 2025, at least 3 out of 5 SWIO countries adopt innovative and robust management measures to combat IUU fishing including implementation of Port State Measures Agreement (PMSA).

Consequently, as part of fulfilling the requirements for implementing and scaling low-cost monitoring, control and surveillance pilots and data collection systems for small-scale/artisanal fisheries, WWF intends to retain the services of a consultant(s) to undertake a scoping study to determine low-cost monitoring, control and surveillance data collection systems for the South West Indian Ocean (SWIO) Region. The results of the study will develop a better understanding of low-cost and MCS tools for SWIO countries and provide a country-by-country feasibility of what mechanisms could be pilots and scaled in the SWIO region to strengthen the countries fisheries management and MCS capacity, allowing for near-to-accurate information from fisheries to the regional fisheries bodies. The low-cost data collection and MCS tools for small-scale fisheries need to be cost-effective. Governments should be encouraged for improving management and compliance rather than demanding enforcement.

There are several constrains which include lack of accurate statistics, scientific information, trained manpower/capacity, formal and informal landing sites, financial limitations among a sound infrastructure for collating data and information.

Parallel session #5.3 - Lessons on Blue Economy & Sustainability

Wednesday, November 23rd, 10:30-12:00

Location: Courtyard I

Chair: Neville Suh

Contributions from individual papers.

Speakers:

1. Abigail Bennett - Connecting food production and consumption through spatial analysis of food and nutrition access for aquatic food systems policy

2. Bornwell Seemani - Assessing the impact of invasive Parachanna species (African snakehead) on Oreochromis and other species in Mweru-Luapula fishery – A case study on Aquacultural spill-over
3. Alhassan Abdul-Wakeel Karakara - Local leadership dynamics and marine resource conservation towards blue economy: The case of coastal Ghana
4. John Kareko - Anchoring Small Scale Fishers in the South West Indian Ocean towards sustainable fisheries and livelihoods
5. Edward Amankwah - Analyzing Fuel Subsidy Policy for Artisanal Fishing Industry, Sustainability and Livelihood Enhancement for Fishing Communities in Ghanaribbean coast of Colombia), within the framework of Human Rights
6. Rodolphe Devillers - Fish2Sustainability: An international initiative for better understanding small-scale fisheries contributions to the sustainable development goals (SDGs)

LUNCH (12:00 – 13:15)

PLENARY SESSION #5 – Leaders in COMMUNITY-BASED CONSERVATION

Wednesday, November 23rd, 13:15 – 15:15

Location: Atlantic Suite

Chairs:

- Friday Njaya, Department of Fisheries, Malawi
- Moenieba Isaacs, Institute for Poverty, Land and Agrarian Studies (PLAAS), South Africa

Panelists:

- Lily Dali, WWF, Kenya
- Haddad Naoufel, Tunisian society for sustainable fisheries, Tunisia
- Britta Hackenberg, Namibia Nature Foundation, Namibia
- Evans Kwasi Arizi, University of Cape Coast, Ghana
- Renier D. Burger, Ministry of Fisheries and Marine Resources, Namibia

Discussants:

- Moenieba Isaacs, Institute for Poverty, Land and Agrarian Studies (PLAAS), South Africa

- Tetsu Sato, Ehime University, Japan

A new form of conservation was developed called community-based natural resource management (CBNRM), which took place outside protected areas. The approach sought to promote multiple livelihood strategies; maintenance of the natural resource base for sustainability; and local, accountable and representative governance and commitment so that local people could derive real benefits. There was an active community of African scholars pushing this approach in the early 2000s. Community-based conservation integrates biodiversity and people and on the continent there are many examples of the leadership in how this approach sought to promote multiple livelihood strategies; maintenance of the natural resource base for sustainability; and local, accountable and representative governance and commitment so that local people could derive real benefits. However, the community-based model for conservation was increasingly critiqued on the basis that neither of the dual functions of supporting community livelihoods or protecting biodiversity were being met that often. In part the failure of CBNRM was attributed to how the model became caught up in neoliberal restructuring and over centralised bureaucracy. The conservation debate often fails to address the obvious power differences between the various communities and actors involved. With the increase in protected areas through 30x30, how do we reclaim as practitioners, researchers and government officials on how to reclaim the leadership and rich scholarship on the continent in community-based conservation and management.

BREAK (15:15 – 15:45)

PLENARY SESSION #6 – Leaders in GENDER EQUITY

Wednesday, November 23rd, 13:15 – 15:15

Location: Atlantic Suite

Chairs:

- Foluke Omotayo Areola, Lagos State University, Nigeria
- Joseph Luomba, Tanzanian Fisheries Research Institute, Tanzania

Panellists:

- Editrudith Lukanga, Tanzania
- Elethu Duna, Namibia
- Charmaine Daniels, South Africa
- Malebo Hellen, South Africa

Discussants:

- Foluke Areola, Lagos State University, Nigeria
- Yinji Li, Tokai University, Japan

Gender equity is recognized as one of the key goals that countries around the world are asked to achieve, as stated in the United Nations Sustainable Development Goals (SDGs). The Voluntary Guidelines for Sustainable Small-Scale Fisheries, endorsed by member states in 2014, also emphasize gender equity, calling attention especially to women involved in the pre-harvest, harvest and post-harvest fisheries chain who are often neglected and marginalized, and are thus highly vulnerable. Many considerations and innovations are required to achieve gender equity in small-scale fisheries. In this plenary session, speakers will share examples of the work and other initiatives that they do to enhance the recognition of women in small-scale fisheries. We invite other examples from the participants during the questions and discussion, and further conversation about what needs to be done, individually and collectively, to elevate the profile and strengthen the voice of women, and to improve gender equity in small-scale fisheries in Africa.

BREAK (17:45 – 18:00)

CLOSING PLENARY

Wednesday, November 23rd, 18:00 – 19:00

Location: Atlantic Suite

Individual abstracts

Analyzing Fuel Subsidy Policy for Artisanal Fishing Industry, Sustainability and Livelihood Enhancement for Fishing Communities in Ghanaribbean coast of Colombia), within the framework of Human Rights

Amankwah, Edward, ekyai@yahoo.co.uk

Marine artisanal fishing in Ghana operates out of fishing communities along the coast. with an open beach using basic fishing methods such as dug out boats (canoe) and often powered with outboard motors. It is generally considered small-scale fishing because it is dependent solely on local resources. This fishing activity is guided by two sets of regulations as prescribed by law of the state through de jure open access and that set by the communities through a system of traditional use rights and common property resources. Gender equality plays a significant role in this industry. While the the industry is dominated by men , females handle processing and distribution of fish products The methodology used for this paper includes secondary sources, information from leaders in the industry and personal observation. The Government has instituted a subsidy regime in support of the marine artisanal fisheries and to build the capacities of players in the industry. This has significantly improved access to the product and enhanced livelihood, food and nutritional security. This subsidy program, however, is faced with a lot of challenges in social, economic and environmental factors. In a desirable situation, improvement on the influence of fuel subsidy will result in decreased social deviance, improved cost and most importantly, the sustainable usage of the fisheries resources, which will reduce over exploitation. To enhance for effective distribution of fuel, a more acceptable means of distribution is to go digital through automated systems to improve efficiency in service delivery.

Mobile electronic recording and reporting application for artisanal and commercial fishing fleets – OlracMDDL

Barkai, Amos, OLSPS, Cape Town Western Cape, South Africa,
amos@olsps.com

Small scale fisheries often struggle with reporting their catches in a simple, effective, accurate and affordable way. Olrac Mobile Dynamic Data Logger (OlracMDDL) is a standalone mobile application that can operate on most modern mobile units using Android or iOS. OlracMDDL was developed to

streamline and simplify the collection and reporting of operational fishing data. OlracMDDL completely removes the need for paper logbooks. The OlracMDDL mobile solution can track, record and transmit fishing vessels movements, by either, using the mobile unit internal GPS or an external GPS antenna. OlracMDDL divide each fishing trip to unique fishing operations (Sets) and catch and effort data can be recorded in real-time, according to the particular characteristics of the fishing method deployed that is fully customizable to the client's needs. It can be used to collect and transmit compliance reports, commercial information, and scientific data all in one intuitive and easy to use user interface. It includes many validation utilities and data entry utilities to reduce the chance for errors and ensure data quality and integrity. All the recorded information can be transmitted, in real time to a web-based and/or physical server using an integrated and dedicated, novel SatCom technology. Alternatively, OlracMDDL can make use of cellular and Wi-Fi networks when in range. Data collected by OlracMDDL can be saved on Olrac dedicated webserver (Olrac Dynamic Data Manager or OlracDDM) and/or be sent to any 3rd party database. Once stored, data can be visualized, and analyzed by permitted users anytime anywhere in the world.

Connecting food production and consumption through spatial analysis of food and nutrition access for aquatic food systems policy

Bennett, Abigail, benne592@msu.edu

New research has shown the tremendous potential of aquatic foods from small-scale fisheries (SSF) to help society reach agreed goals to end hunger and malnutrition (e.g., Sustainable Development Goal 2), but now national policymakers governing these systems must grapple with questions of “how”. To answer these questions, spatial information is needed to understand if food insecure populations have access to these nutritious foods. Even as scientific knowledge about nutritional yields from aquatic systems rapidly advances, science and policy must still find a way to ensure the right nutrients reach the populations that need them. We introduce a spatial approach to analyzing food access that illuminates the flows connecting the production and consumption of aquatic foods and apply it to measure physical and economic access to fish in Malawi. We then illustrate why this approach is critical to policy development by describing key policy directions and decisions it enables.

Gendered Perceptions and Attitude of Fish Traders on Use of Mobile Phones on Artisanal Fish Marketing in Malawi

Chimseu, Patrick, pchimseu@luanar.ac.mw

Assistant Prof Abigail Bennet,

Prof Emmanuel Kaunda,

Associate Prof Samson Katengeza, MSU & LUANAR, AAP PIRA PROJECT

This paper utilizes qualitative and quantitative approaches to assess female and male fish traders' perceptions and attitude, on how mobile phones help in addressing fish marketing problems. Results from 36 FDGs (106 Female & 106 Male), show that all fish traders regardless of gender lack access to capital, real-time market information, storage facilities and face price volatility among other problems. Female fish traders alone, suffer fish-for-sex trade and lower profits. Study results revealed that, all fish traders view mobile phones as an important tool in fish trading since they all use phone calls to source market information every day. Fish traders trust information shared by fellow traders through phones but due to the dynamic nature of fish business, fish market information keeps changing. Mobile phone communication is considered convenient for many fish traders but female traders heavily depend on male traders and friends to source market information. Only a few female traders own phones, and among those with phones, not many use SMS, WhatsApp and Facebook in marketing fish as many male traders do with good smartphones. Since the fisheries sector plays a critical role at national and global level, it is important that policy interventions and national investment support mobile phone communication among fish traders, to improve fish market inefficiencies and fish traders' livelihoods.

Small-scale fishers socio-ecological vulnerability in southwest Madagascar

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Coastal artisanal fisheries make vital contributions to food security, livelihoods, jobs, and income in coastal communities globally. However, global change impacts coastal resources and communities who depend on them, making them more vulnerable to multiple stressors. Our research aimed at assessing the link between socio-ecological vulnerability and poverty level of coastal fishing households in the Bay of Toliara (~350,000 inhabitants) in southwest Madagascar through an interdisciplinary approach. Fisheries surveys were collected through cross-referencing GPS trajectories of fishing boats and associated catches (2018-2019) and socio-economic surveys were conducted to collect households characteristics. We estimated socio-ecological vulnerability and level of deprivation (as indicator of multidimensional poverty) of 166 fishing households. The analysis highlights the weak relationship between socio-ecological vulnerability and level of poverty. About 38% of households were both highly vulnerable with higher level of poverty while 19% had both lower level of poverty and socio-ecological vulnerability. Overall, 43% of households had low or high socio-ecological and poverty level. Our results suggest that the diversity of alternative activities in the households were key to increasing social adaptive capacity while the diversity of fishing activities had no impact. Also, households exposed to degraded ecological conditions were more vulnerable. Our work shows that household can remain highly vulnerable despite relatively lower level of poverty. Development and community-based resources management measures are necessary to decrease both the socio-ecological and poverty level of fishing households to avoid a poverty trap.

Supporting the environmental sustainability ambitions of small-scale artisanal fisheries – initiatives by the Marine Stewardship Council

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Small-scale fisheries are faced with many challenges. The resources they rely upon are increasingly threatened by unsustainable fishing practices (overfishing and the occurrence of illegal, unreported and unregulated fishing); habitat destruction and climate change. Difficulty accessing complex seafood markets, and the need for appropriate infrastructure to prepare product for these markets, creates economic obstacles. Further challenges include a lack of

effective participation in governance frameworks and social inequality in terms of access to the resource. According to the FAO, small-scale fisheries provide around half of all global fish catches and support the livelihoods of millions worldwide, so addressing these challenges is critical. However, the complexity of these challenges means there is no one single solution. Instead, multiple approaches are necessary and should be implemented through partnerships between governments, non-state actors and fishers. The Marine Stewardship Council (MSC) works with partners to recognise and reward environmentally sustainable fishing practices. Beyond its certification scheme, the MSC also has a focus on supporting the sustainable fishing ambitions of small-scale and developing economy fisheries. The 'Pathway to Sustainability' programme uses the MSC's Fisheries Standard as a framework for improvement, which, together with guiding tools and training provides fishery operators and fisheries management bodies with a road map to sustainable fishing. This presentation will provide an overview of the Pathway to Sustainability programme and describe how small-scale fisheries can benefit from participation. Two case studies will be discussed: the South Africa east coast rock lobster fishery and the southwest Madagascar octopus fishery.

The Dilemma and Prospects for Transboundary Fisheries Management in Kavango-Zambezi Transfrontier- Conservation Area (KAZA)

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Inland fisheries in Kavango-Zambezi trans-frontier conservation area (KAZA-TFCA) offers food security and a cheap source of micronutrients to the vulnerable riverine communities and the region at large. It also contributes towards the attainment of sustainable development Goals number 1 and 2, which basically aims at eradicating Poverty and hunger. Despite this importance role, inland fisheries in the region have suffered severe declines in fish catch rates. Furthermore, Climate change is exerting pressure that are altering the ecology of the river systems in the region. These challenges are amplified by COVID 19 pandemic, which has further presented a cost constraint against sustainable implementation of fisheries interventions. As a consequence, optimal utilization of the fishery to enhance people's livelihoods is undermined. Transboundary fisheries management efforts to sustain the

resource from further decline have been attempted, but their success have encountered a lot of roadblocks. In order to sustainably conserve fisheries resources in a transboundary fishery, this paper reviews relevant literature together with key informant interviews to elicit primary and secondary data on governance and management of fisheries resources in the region. The study identifies conflicting regulations, inadequate institutions and insufficient policies, among member countries, as major bottlenecks towards resource sustainability. The study proposes the use Food and Agriculture organization Code of Conduct for responsible fisheries as a common framework to guide analysis of the study and support responsible fisheries management.

Study of the selectivity of gillnets used in small-scale fishing in the rivers of Guinea-Bissau

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Artisanal fisheries in Guinea-Bissau play a crucial role for social development, contributing greatly to the economy and food security of its people, with emphasis on improving the living conditions of the local community, and creating the permanent and seasonal jobs in these activities. The country has rivers and creeks classified rich in biological diversity and essential habitats to different species due to high concentrations of nutrients throughout the year. The present paper aims to present the results of gillnet selectivity obtained on nine (9) main species (*Pseudotolithus elongatus*; *Arius parki*; *Arius laticutatus*; *Ethmalosa fimbriata*; *Chaetodipterus lippei*; *Ilisha africana*; *Sardinella maderensis*; *Eucinostomus melanopterus* and *Galeoide decadactylus*). This work was conducted in the rivers of Cacheu, Buba and Cacine, with a total of 1160 fishing trips, containing different mesh layers as follows: 14 mm, 25 mm, 35mm, 50 mm, 60 mm and 80 mm. L50 per mesh was done on each species. Using the methodology described by Millar (1991) and Millar & Holst (1997) called SELECT it was possible to determine the L50 of the appropriate meshes for each species under study. In general, this article demonstrates that the minimum mesh size used for catch depends on each species, the most important species such as *P.elongatus* is recommended to use a 35mm mesh instead of 30mm. Keywords: gear selectivity, minimum size, artisanal fisheries, gillnetting.

Local leadership dynamics and marine resource conservation towards blue economy: The case of coastal Ghana

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The ocean is not only a source of basic human needs such as food, fodder, energy and medicines but also non-market goods and services which are vital for human life and livelihood. Human interactions with the oceans, by exploiting its resource keeps changing over history causing an unsustainability concerns. The most prominent human engagement with the ocean is fishing, where many people, including the poor, vulnerable and less advantaged, earn their livelihoods. There are calls for sustainability of the ocean and local fishermen leadership presents an opportunity to achieving this. Leaders act as catalyst encouraging collective action, effective public participation among stakeholders and community members during resource management and to achieve this leadership needs to be dynamic. Thus, we explore how local fishermen leadership could be a cartelist to achieving marine resources conservation towards blue economy in Ghana. We studied Ghana's coastal artisanal fishing sector because; it is over 70% of the total fishing sector and women represent more than 60% of workers in the sector. Data was collected using Key Informant Interviews (KII) of 45 chief fishermen across nine semi-urban, two urban and 16 villages along the coast of Ghana. Adopting mixed method analysis, we summarized that there is a strong multiple leadership capacity in majority of the coastal villages. These leadership capacities are responsive to prevailing ecological conditions and there is moderate trust between leaders and fishermen. This dynamic leadership role is a ground to conservation and subsequently blue economy. Policy implications are discussed in the paper.

Anchoring Small Scale Fishers in the South West Indian Ocean towards sustainable fisheries and livelihoods

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Anchoring Small Scale Fishers in the South West Indian Ocean towards sustainable fisheries and livelihoods John Kareko¹ and Doreen Simuyu¹
¹South West Indian Tuna Forum (SWIOTUNA) Abstract Discrete individual fisher voices have served as deterrent to sustainable small-scale fisheries and management of marine resources at large. South West Indian Ocean Forum (SWIOTUNA) envisage that securing sustainable small-scale fisheries and management of marine resources lies in the way fishers organize to harness and manage the fisheries resources through collective decision-making and voice. SWIOTUNA has embarked on organizing fisher folks in the South West Indian Ocean (SWIO) region from a local, national and regional level for better representation and engagement in national and regional decision-making processes. SWIOTUNA approach has focused on local civil society organizations to create national alliances for a national fishers' voice to influence national policies and be part in national fisheries decision making. At a regional level, SWIOTUNA serves as an umbrella body uniting the national alliances to have a SWIO region voice and influence decision making within the region towards sustainable small-scale fisheries and fishers' livelihood. So far SWIOTUNA has managed to secure an observer status in the Indian Ocean Tuna Commission (IOTC) representing the interest of small-scale fishers in the region. Capacity building for the small-scale fishers has taken a center stage in promoting effective and informed engagement and participation in policy and decision-making processes. SWIOTUNA has served as the anchor of small-scale fishers in support and implementation of voluntary guidelines for securing sustainable small-scale fisheries.

Community-based marine resource management: an approach to promote marine biodiversity conservation and enhance human well-being

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Through its community-based marine resource management approach, WWF Madagascar works with coastal communities to promote sustainable marine resource management and good governance in coastal areas. With the establishment of Locally Managed Marine Areas, WWF Madagascar has put in place an effective monitoring and evaluation system on community-based marine resource management in these seascapes; this consists of marine ecological monitoring, monitoring and data collection on small scale fisheries, patrol effort monitoring and household monitoring. Apart from monitoring activities, coastal communities, with the support of WWF, also participate in

activities to protect critical marine resources, safeguard important habitat (such as mangrove and coral reef) and promote sustainable fishing practices to improve their living conditions.

Enhancing Small Scale Fisheries Cross Border Trade Barriers among African Countries. Recommended Innovative Tools and Approaches

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African countries small scale fisheries producers have a great propensity to solve the countries food insecurity with respect to fisheries production. However, the contribution of the producers to food security and trade are undermine and not recognized by various trade policies and regulations in Africa. This paper examined the small-scale fisheries production in some selected West and South African countries. It assessed how the countries trade among themselves. It was interesting to find out that African countries small scale fisheries producers are willing to trade among themselves to reduce the influx of non-African fisheries products in the Africa markets. However, these producers are faced with cross border barriers such as traffics, import and export regulations, poor road and market infrastructures, inconsistent quality assurance standards and health certificates among countries. This results in post-harvest loss during transportation and handling in cross borders. The paper recommends that African countries can only achieve fisheries security as well as reduce balance of trade among countries, if there could be an innovative tools and approaches to harmonize all African cross border trade regulations relating to fisheries products from Africa counties, provide good road networks for free flow of fisheries products and storage facilities for cross border fish to loss post-harvest loss.

Community Catch: a market-based standard for sustainable small-scale fisheries

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Small-scale fishers are critical in coastal communities, marine ecosystems and global food security. Despite all this, small-scale fisheries are too often ignored when it comes to investment by government or the private sector. The assumption often is that they are high-risk outfits with little return on investment, taking out of the ocean and coastal waters and not putting much back. Small-scale fisheries are also increasingly being marginalised in the

marketplace and are struggling to remain competitive when competing with large industrial fisheries that have been built on the back of harmful fisheries subsidies. A new standard called Community catch aims to create a level playing field for small-scale fishers - giving them a voice in 'sustainable' seafood markets. The mission of Community Catch is to connect small-scale fishers to those markets which bring the greatest benefit for fishing communities and their environment. The initiative aims to provide the support, tools and connections needed to allow fishing communities to develop sustainability.

Building a model for community-based fisheries management and conservation in Madagascar, case of Barren isles Madagascar's largest marine protected area

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The Barren Isles archipelago locally-managed marine area, located in the west coast of Madagascar, is one of the few remaining areas of thriving marine biodiversity in the western Indian Ocean. The area is home to some of the region's healthiest marine ecosystems and supports the livelihoods of more than 4,000 fishers. One of the most isolated regions in Madagascar, the Barren Isles are facing threats and pressures from unsustainable fishing, conflicts between small-scale and industrial fishers, mining, oil and gas exploration, and climate change. Responding to these challenges, we help coastal communities develop a model of fisheries management around the Barren Isles. This presentation aims to demonstrate how fisheries management pays and inspires more ambitious actions to protect marine ecosystems. Participatory habitat mapping and fisheries monitoring were conducted by community members to identify management measures to test, adapt and scale. Community representatives were engaged to disseminate findings that led to management measures, agreed by all local communities. A management plan was elaborated with an enforcement mechanism to manage fisheries and protect key habitats.

Developing innovative conservation model for engaging people to participating in small scale fisheries management in Madagascar

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Madagascar is one of the world's poorest countries. Over half of the population depends on marine resources and over two thirds face chronic food insecurity. Small-scale fisheries present a solution, contributing to food security and sustainable livelihoods. However, these fisheries are facing pressures and threats from overfishing and solutions need to be proposed to confront these issues. In addressing these concerns, Madagascar has developed a number of approaches, ranging from centralized management to local management. This presentation aims to discuss how a locally led marine conservation model that empowers local leadership can help to address the challenges of fisheries management in places like Madagascar. Fisheries diagnostics conducted with communities help understand the context and allow potential management measures to be identified. Management strategies are selected, tested, and adapted by communities within local management action plans. Fisheries monitoring plans are designed and implemented alongside these action plans to gather data and inform adaptive management. One of the first community led management strategies was periodic octopus closures in southwest Madagascar. The initial success of this management initiative drove the creation of the first Locally Managed Marine Area. Because of its success, we've developed a scalable model for catalysing and sustaining marine conservation and engaging communities to protect our ocean. This model has been replicated by other communities across the country and outside of Madagascar. But communities in these places face many constraints to managing their coastal waters. The model is designed to improve fishing livelihood and engage the community in management.

**Developing integrated and consensual fisheries management and
governance through local participative science, consultation,
restitution and involvement of local communities in Madagascar -
Case of Mahajamba LMMA**

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In Madagascar, small-scale fishers were previously absent in governance structures due to a centralized resource management. Local structures had consequently no power to manage. This has changed gradually since the recognition of community-based management and the implementation of Locally Managed Marine Area (LMMA). Mahajamba bay, located in the north-west of Madagascar covering the largest mangrove ecosystems in the country, is one of the areas to apply this approach. The aim of this presentation is to discuss the case study of Madagascar by identifying the strength of local small-scale fisheries management and governance, decisions flow, and the eventual improvements. In Mahajamba LMMA, community members are organised through associations and management measures are taken through community meetings. This decision-making approach reduces conflicts and increases compliance because everyone's voice counts. At a higher level, these associations are represented by the LMMA network. The latter supports and empowers local structures by building local leadership. Communities within this LMMA are involved in fisheries diagnostics and participatory monitoring. Data restitutions empower coastal communities and increase engagement. Decisions are taken locally through local law, which is enforced by community-based surveillance agents. Improving fishing returns through value chains is conditional on communities having management in place. Being heard and being part of the fisheries management and governance require responsibilities from the community to participate in the management activities. This engagement helps them to make decisions. When these decisions are transmitted to the national authority, suitable governance structures are implemented in all levels with better information flow and decisions.

The impact assessment of social protection services and improved fish smoking technology on small-scale fisherfolks' livelihood in Ghana

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Many analysts regard social protection services (SPS) and improved fish smoking technology (IFST) as an effective pathway to stimulate small-scale fisherfolks' access to credit, increase productivity, enhance market engagement, alleviate poverty as well improve food security and nutrition quality, particularly in rural coastal communities where large number of poor people are concentrated. However, the driving forces behind fisherfolks' decisions to participate in SPS and adopt IFST have received little attention in Ghana. Using a multistage random sampling technique, 600 fisherfolks from five selected coastal communities in Ghana were selected. A triple hurdle model was used to capture factors influencing a 3-step decision-making process: SPS participation, IFST adoption, and participation in high-value market. Also, an endogenous switching regression model was employed to evaluate the effects of SPS and IFST on livelihood. From a policy perspective, the findings imply that the transmission mechanism to enhance small-scale fisherfolks livelihood and also to transform the subsistence nature of Ghanaian fisheries sector into a sector characterized by commercial sector through high-value market participation is to scale-up SPS and IFST. Increasing SPS participation and IFST adoption will enable small-scale fisherfolks to get access to credit, gain greater high-value market, which would in turn improve income, food security, and nutrition quality. Therefore, small-scale fisherfolks in Ghana need to be supported by both the private and public sectors in this regard.

Empowerment of small-scale fishers can take many forms

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Small-scale fishers produce a quarter of global aquatic foods. They do so with inferior emissions than industrial fleets generating more than 100 million jobs along their value chains. Yet, they are marginalised in sector governance and such crucial exercises as marine spatial planning. They have suffered severe income losses as a result of subsidised overfishing. Here we present some approaches and tools to empower small-scale fishers towards collective action to claim their professional, cultural and citizen rights. Putting people and their communities at the centre of approaches to enable positive change is at the heart of the Small-Scale Fisheries Academy, field-tested in Senegal. Using visual facilitation for active and inclusive learning the Academy provides

operational support for the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries. Especially for the International Year of Artisanal Fisheries and Aquaculture (IYAFA 2022), additional tools are made available. Adding a Wolof version of an explanatory video about the Voluntary Guidelines informs fishers in Senegal and Mauritania about their rights. A teaching aid and (pupil) work book on the ecosystem approach to fisheries has been shown to be useful in fishing communities as well. The FishBase Guide App freely available for android in the Google Play Store provides easy access to key information on minimum size and vulnerability typing a vernacular name from any country. The app is also suitable for use in general education promoting awareness about catching mostly adult fish (bigger than minimum size), if resources are to remain productive for ever.

Transdisciplinary collaborative leadership for collective actions toward sustainable small-scale fisheries: A case study on the co-creation of an artificial fishing reef in Lake Malawi

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Integrated knowledge co-created in transdisciplinary processes has the potential to mobilize collective actions toward sustainable futures. Trust-based transdisciplinary collaborations of small-scale fishers, knowledge translators, and scientists create collaborative leadership to mobilize social-ecologically legitimate collective actions based on the integration of diverse knowledge. In the Madothi area of Chembe Village in Lake Malawi National Park, Malawi, the leader (Kalanda) and members of the Beach Village Committee consisting of small-scale fishers and coastal residents responsible for coastal management had been working on the idea of constructing an artificial fishing reef called “chirundu” near their village to improve fishing opportunities. Repeated dialogue with a knowledge translator (Matewere) from the community and a scientist from Japan (Sato) resulted in an innovative design of artificial chirundu combining local and scientific knowledge. With the support of two research projects from Japan (TD-Vuls project, 2017-2019, and IntNRMS project, 2019-), an artificial chirundu was constructed in April 2019, and its social-ecological impacts have been anecdotally monitored at various intervals. The chirundu provided the small-scale fishers, especially those from vulnerable families, with opportunities of subsistence and commercial fishing, created a new habitat for endemic planktivorous and algivorous fishes (cichlidae) with high conservation values; and spawning sites for a large catfish

(*Bagrus meridionalis*) with commercial importance. The transdisciplinary collaborative leadership based on mutual trusts was revealed to be effective in co-creation and adaptive improvement of novel collective actions for the sustainability of small-scale fisheries, improvement of human well-being, and conservation of ecosystem functions and services in the coastal area.

Assessing the impact of invasive *Parachanna* species (African snakehead) on *Oreochromis* and other species in Mweru-Luapula fishery – A case study on Aquacultural spill-over

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In recent years, environmental DNA (eDNA) is increasingly being used to complement data obtained from traditional or conventional methods in detecting and monitoring cryptic and invasive aquatic fish species. Our study applied eDNA metabarcoding alongside traditional stock assessment methods (gill net surveys, catch assessment surveys and structured questionnaires) to assess the presence, abundance, distribution and impact of invasive *Parachanna* species on native species in the freshwater Mweru-Luapula fishery of Zambia. Overall conventional assessments showed changes in composition, abundance and distribution of fish species, including varying levels of fishing pressure and activity rate in all the fishery strata invaded by the invasive *Parachanna* species. It is therefore imperative to employ appropriate localised eDNA approaches and also consistently undertake large scale surveys, incorporating physiochemical variables and fish behaviour over a period of time to establish these findings. This dual approach in monitoring aquatic species will enhance conservation actions in the already invaded systems and protect the threatened biodiversity. Keywords: Biodiversity, conventional assessment methods, eDNA, fishing pressure, invasive, *Parachanna* species.

Women in the Fisheries Ecosystem: An Evaluation of the Small-Scale Fisheries Industry at Hamburg Coastline, Eastern Cape

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This study seeks to evaluate the participation of women in the ecosystem of fisheries at Hamburg in the Eastern Cape. The fisheries industry has been widely viewed as a critical source of income and livelihood in the area. There has also been a focus on the ways in which the fisheries industry can be enhanced to ensure sustainability of livelihoods, while centring environmental cognisance and care. Considering this, however, it is important that research is conducted to evaluate the openness of the industry for the participation of women and contributions that the industry has to their livelihoods. The study seeks to map up the face and the look of the ecosystem, how much stake women have in the fisheries value-chain. This is very critical for policy perspective so as to ensure proper interventions in terms of policy to expand the participation of women in the fisheries industry. Hamburg is a small town with a vibrant fishing industry that is largely informal but beneficial to livelihoods of poor families, the findings of the study will be advantageous for generalisation as recommendations of the study can be used to develop relevant policy interventions. Using a mixed method approach, in-depth interviews with key informants and questionnaires, the study will seek to investigate the participation of women in the fisheries industry, and if any, seek to find what the barriers are to the participation of women in the fisheries industry.