

Special Initiative "Transformation of agricultural and food systems"
Global Programme Sustainable Fisheries and Aquaculture

Newsletter #11

14.12.2023

Dear reader,

the African Chapter of the World Aquaculture Society organized the 2nd **African Aquaculture Conference** (AFRAQ) from the 13th till the 16th November 2023 in Lusaka, Zambia. The conference was centred around the theme "Resilient value chains in the blue economy". AFRAQ offered a great opportunity for aquaculture researchers, practitioners, decision makers and other stakeholders to meet, network and discuss all aspects of aquaculture in Africa. Exhibitors from all over the globe exhibited their products and innovations and showcased their experiences, lessons learnt and impacts on the aquaculture sector in Africa.

GIZ - with its **Global Programme Sustainable Fisheries and Aquaculture** - co-sponsored this event as a regional platform for knowledge exchange and used the opportunity to showcase results from seven years of project implementation.

For further information and details on the AFRAQ 2023, please dive deeper into the **GP Fish Newsletter #11**.

We hope you enjoy reading and learning about our ongoing project activities!

The Communication Team

African Aquaculture Conference (AFRAQ) 2023

The following modules participated in the AFRAQ conference:

Uganda



Malawi



Madagascar



Zambia



India



The AFRAQ Conference 2023, Kasaka side event and World Café



The Global Program for Sustainable Fisheries and Aquaculture (GP Fish) participated at the AFRAQ 23, at the Mulungushi Conference Centre in Lusaka.

Hosted by the Zambian Ministry of Fisheries and Livestock in collaboration with the World Aquaculture Society, the second Africa Aquaculture Conference promised to be a cornerstone in Africa's rapidly growing aquaculture sector. The AFRAQ showcased the latest research and innovations in the aquaculture industry. A trade show with 36 exhibitors from 15 different countries served as a comprehensive platform for sharing ideas and services, playing a crucial role in the ongoing development of sustainable aquaculture. Key stakeholders such as the Minister of Fisheries and Livestock and the President of the World Aquaculture Society highlighted Zambia's unique position as a leading aquaculture producer in Africa, sharing valuable insights on

lessons learned and commitments towards sustainable aquaculture development. This year's theme, "*Resilient Value Chains in the Blue Economy*", emphasized the importance of sustainable practices. The conference featured a mix of technical sessions, workshops, and real-life success stories, illustrating the industry's potential impact on economic development and food security. The conference was an opportunity for researchers, policymakers, and industry leaders to share ideas and develop a vision for the future of aquaculture. The GP Fish hosted a booth to promote sustainable aquaculture practices and sensitization campaigns, disseminating the project's successes and its contributions to household food security.



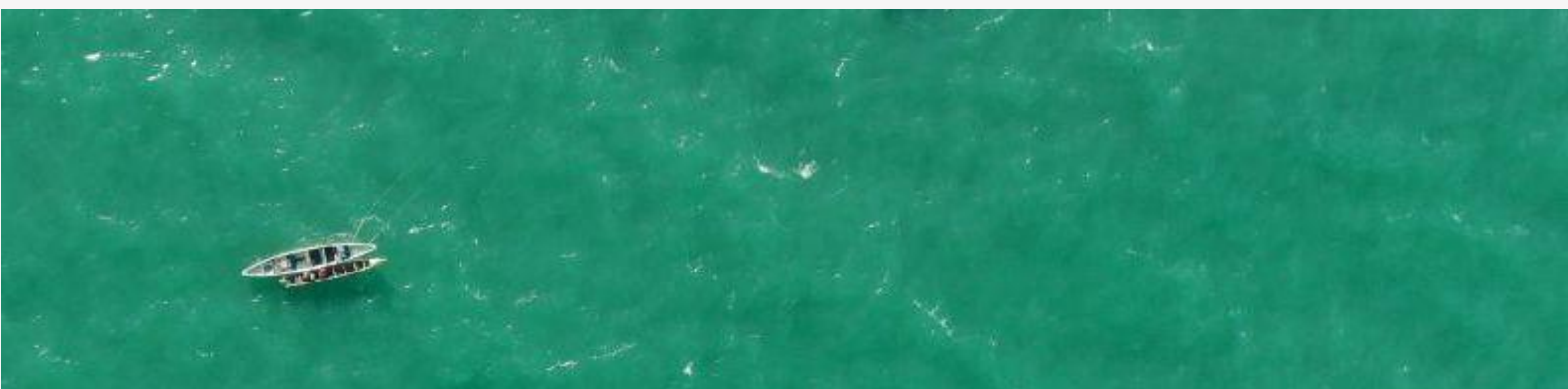
Mulungushi International Conference Centre. © Jason J. Mulikita/GIZ

On the day before the main Conference, the Steering Unit and F4F project organized a World Café event that served as a dynamic forum for knowledge exchange. The event featured representatives from various GP Fish modules, including Malawi, India, Uganda, Madagascar, and Zambia, along with members of the GP Steering Unit. Each module discussed their accomplishments and exchanged their experiences, which created a collaborative spirit among the participants. The World Café stands focused on several cross-cutting topics, such as the sustainability of Multi-Stakeholder Platforms, Quality Standards and Control, Digitalization, Transforming agriculture and food systems and Media Presence. The day was closed with a joint walk to the venue's welcoming event.

On the 17th of November 2023, the last day of the Conference week, the F4F project in Zambia held a side event at Kasaka Fisheries Training Institute in Kafue. Here, the F4F showcased their project's achievements, innovations, and insights. It emphasized the importance of fish in tackling food security, advocated for sustainable aquaculture and fishing practices and enabled the other GP Fish modules to learn from the project's successes and take home important impressions from the Zambian work on the ground. The side event was crucial for illustrating progress, discussing impacts, and promoting collaborative learning within the GP Fish family.



Aerial view of the Kasaka Fisheries Training Institute in Kafue, where the F4F project exhibit their different interventions across Zambia. © Jason J. Mulikita/ GIZ



GP Fish, greatly represented at the venue



The presence of the three GP Fish booths at the AFRAQ 23 venue was most relevant, given the cruciality of the topics they addressed in the broader context of the aquaculture sector.

The booths offered a widespread perspective that meets key challenges in this field. The "Feed and Finance" booth highlighted the essential role of sustainable feed sourcing and financial mechanisms in aquaculture. This booth highlighted the financial risks of the use of industrial feeds for small-scale farmers and gave sustainable alternatives for extensive fish farms. The "Innovation along the Fish Value Chain"-booth introduced new methods to harvest and process fish. Above all, these empower women through less demanding working techniques and increased efficiency. The

third booth on "Sensitization Campaigns" addressed a vital aspect often overlooked: the engagement and education of stakeholders and communities. This focus on awareness and behavioural change stood out as the only one of its kind at the venue.

Staffed by team members and partners from five different country packages of the GP Fish, the trio of booths attracted numerous attendees and fostered valuable interactions on political and business levels, but also on a personal basis.



Build up of the three GP Fish booths "Feed and Finance", "Innovation Along the Fish Value Chain" and "Sensitization Campaigns" at the AFRAQ venue. © Jason J. Mulikita/ GIZ

„Feed & Finance“

As many visitors agreed, knowing the best feed type for your fish along with understanding the feed costs are crucial factors in determining the success of fish farms. At the Feed & Finance booth, we asked: Have you ever calculated how much money you must spend on feed to produce one kilogram of fish? Other than just the price per kg of feed, the Feed Cost Ratio tells you how much money you spend in feed to grow 1 kg of fish.

In showcasing the volumes needed to produce one kilogram of fish, maize bran clearly took the lead followed by maize and soya mash and industrial fish feed. But taking into account the costs, natural pond production and supplementary maize bran is surely the cheapest and least risky feeding model in extensive aquaculture. Ideally, feed cost should be calculated every time you sample and weight your fish and can best be done by documenting it in a Farm Record Book (FRB).



Visualization of the FCR of maize bran, maize & soya mash and industrial fish feed, when relating the production to feed costs in the local currency Zambian Kwacha. © Jason J. Mulikita/ GIZ

The FRB was the second major product presented. Newly launched by the Sustainable Aquaculture for Food and Livelihood project in India, the FRB gained ample attention as it proves to be an effective and supportive tool to aid farmers in record keeping. It enables farmers to know why to and how to monitor their business through explanations and templates for record keeping of production data, income, and expenses. This allows an individual farmer to gain the knowledge needed to better [plan with the records at hand](#) and get better access to finances and government schemes. As an add-on, the FRB comes with a digital monitoring solution for individual farmers to share records with their farmer cooperation, boosting communal benefits e.g., negotiating better prices for bulk selling or bulk purchase of feed. With a better understanding of productivity and profitability farmers and farmer cooperations are empowered to make informed business decisions and hence ensure the sustainability and success of their enterprise.

„Innovations along the fish value chain“

In the second booth the GP Fish showcased two major innovations benefiting fish farmers and processors, primarily women, in partial harvesting and smoking their fish. The first is the Intermittent Harvest Technique, a method enabling selective harvesting of small fish from ponds. For this technique, farmers are building a trap out of low-cost material such as wire and mesh, and placing it in mixed-sex tilapia aquacultures. The trap's design allows small fish to slip through while preventing larger fish from entering.

This selective extraction helps manage excessive offspring and counteracts the pond's overpopulation. Additionally, this technique increases the regular protein intake of the farmer's household, as the harvested fish are of a consumable size. By actively managing the pond's carrying capacity, this method also increases the farmer's yield at the end of the harvesting cycle.

The second innovation presented was the multifunctional stove Chitofu zinj, facilitated by the Aquaculture Value Chain Project in Malawi. This energy-efficient stove and its smoking chamber, not only help reduce post-harvest losses by extending the shelf life of fish products but also save up to 80 per cent of the required firewood. As a result, users and their customers have access to a more affordable and nutritious diet. The technology presented at the venue especially benefits women, who are often responsible for fish processing. Both innovations received positive responses, particularly from guests interested in low-cost solutions for small- and medium-sized aquaculture businesses.

„Sensitization and Information Campaigns“

The sensitization and information campaigns booth showcased various communication products that are aimed at effectively reaching out to different target groups. All the exhibited communication products are tailored to raise the profile of sustainable fisheries and aquaculture, raise awareness on the nutritional value of fish and encourage consumption of fish, thereby improving household food and nutritional security.

Among the communication products showcased was the “Let Me Tell You” Series, an animation series developed by the F4F project in Zambia. It is broadcast on TV, radio, and in comic book formats which were handed out to booth visitors on USB sticks and as hardcopies (comic books). The series contributes to the national goal of nutritional awareness. The GP Fish program also demonstrated a board game, snakes and ladders, and handed out a „Fish Tales“ card game to the booth visitors.

The other point of emphasis was the solar powered radios, used by community members during Covid 19 pandemic. The Zambian Fish for Food Security project through community-based structures formed community radio listening groups, an innovation that allowed them to reach the community members during the outbreak of Covid 19 pandemic.



Visitors of the GP Fish booth received a notebook with personal stories of our target group, fish-key chains or USB sticks. © Lukas N. Tump / GIZ

The interest in all three GP Fish booths was immense. The various materials and exhibition items, like the fish trap and the Chitofu zin1 oven, attracted the attention of the conference participants.

Among the high-ranking visitors during the open venue hours were the Minister of Fisheries and Livestock as well as the Minister of Youth and Sport., who both appreciated the work of GIZ, funded by BMZ in the aquaculture sector.

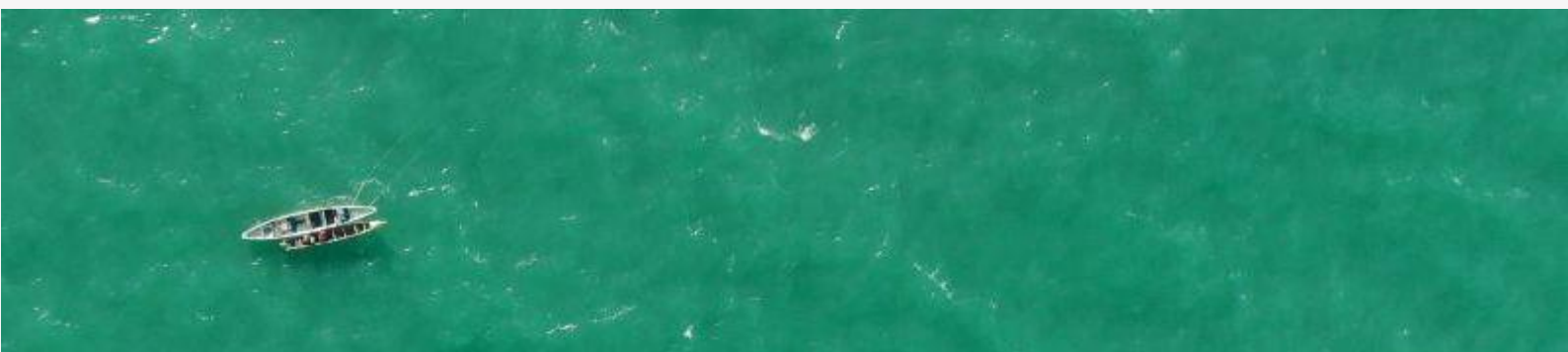
Many visitors, among others the president of the Nigerian chapter of AWFISHNET, delegates from the Belgium Development Agency ENABLE and many international experts on aquaculture were keen to gather information and materials on ABS and farm monitoring.

Even on an educational level, the GP Fish booth was highly popular, as students and their professors stood in line to question the GP Fish colleagues. A lecturer from the Animal Science Department of the University of Zambia, for example, inquired about the Chitofu's availability and application in Zambia. He was particularly drawn to the stove's health benefits and its potential to save time and energy.

Through these interactions, the GP Fish aims to reach a wider audience for their materials like the „Let Me Tell You“ Series, which was enquired by the National Agricultural Information Services (NAIS) media, to broadcast the radio and animation episodes.



Friederike Sorg, head of GP Fish, and Samanta Mapfumo, team leader of the F4F project welcoming the Minister of Fisheries and Livestock at the crowded GIZ booth. © Lukas N. Tump / GIZ



Adaptation of Aquaculture to Climate Change: responses at the pond-level



During the AFRAQ Conference, GP Fish organized a side event focused on climate change adaptation in the aquaculture sector, chaired by Friederike Sorg, project leader of the Global Program.

The speakers included Professor Fanuel Kapute from the Mzuzu University in Malawi, Herilalao José Andriarimalala from the NGO APDRA in Madagascar and Olivier Joffre from GIZ Madagascar. They discussed the impacts of climate change on the aquaculture sector and explored potential adaptation strategies.

Fish is an inexpensive source of animal protein and provides an opportunity to fight malnutrition. Today, climate change poses the biggest environmental threat with irreversible impacts. Rising temperatures, changes in rainfall patterns and more frequent extreme weather events

impact fish production. It is expected that the availability of fish will be more variable, and the stability of the fish supply will decrease. Changes in the environment will impact livelihoods' access to aquatic foods. As often with climate change, those affected are not the polluters. Small-scale aquaculture, for which feed or fertilizer are barely used, only has very low CO₂ emissions.

The speakers at the side event highlighted that the drying up or flooding of ponds and rice fields, the destruction of infrastructure by extreme weather events and an increase in aquatic diseases leave



The session speakers Professor Fanuel Kapute, Olivier Joffre and Herilalao José Andriarimalala wait to give their input to the AFRAQ side event on adaptation of aquaculture to climate change. © Jason J. Mulikita/ GIZ

their marks on small-scale fish producers. To adapt, they must learn different strategies and techniques to sustain their businesses. The dikes of ponds or rice fields must be raised so that fish are not flushed out in case of flooding.

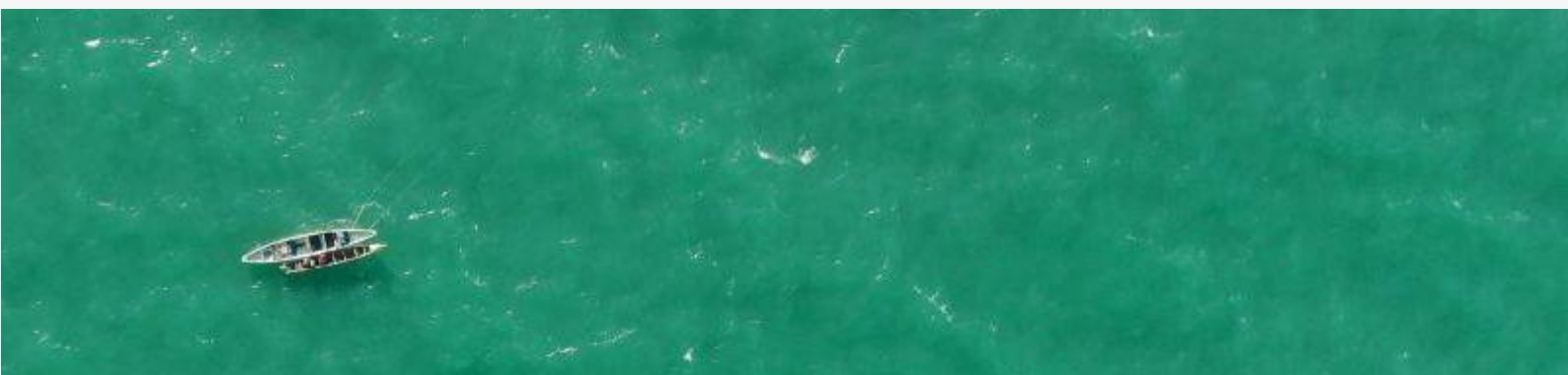
Refuge channels need to be deepened to increase fish survival, even if higher temperatures occur over a long period of time. Producers have to work together to actively seek solutions to improve water access, storage, and management. In doing so, they also need to learn how to maintain and rehabilitate infrastructure on a regular basis. The NGO APDRA initiated research on various fish species to find out more about their robustness and adaptability to climate change. Fish

producers are being trained on the selection of fingerling storage sites and on techniques such as multiple spawning to adapt the fish farming calendar. Reforestation measures at the pond level become crucial to protect watersheds and slow down erosion. At the same time cyclone warnings via mobile phone help to prepare fish farming sites in time.

The side event was widely attended and discussions among the participants after the presentations underlined the relevance of the topic. Climate change is the biggest environmental threat of our time. As a complex problem, it requires complex and holistic solutions such as adaptation at the pond level.



The room hosting the side event was filled with attendees keen to hear the speakers share their experiences adapting Africa's aquaculture sector to the challenges of climate change - a topic that, while relatively new, is increasingly urgent. © Jason J. Mulikita/ GIZ



Education for Aquaculture: Development and implementation of tailor-made training concepts



In the afternoon of November the 17th, as one of the last session of the AFRAQ 23, a side event about Education for Aquaculture was organized by GIZ.

This session around the capacity development approach chosen by the GP Fish was chaired by Dr. Marc Nolting, head of the GIZ-division Global Agendas for Food Security. An introduction to the topic was provided by Dr. Jens Kahle (advisor at the Steering Unit). He presented the theoretical background of GIZs capacity building strategy, highlighting the difference between knowing about aquaculture and the ability to generate an income by applying the knowledge. To bridge this gap trainings shall be need-based, adapted to the local context and applicable for smallholders. Mrs. Madalitso Magombo Chatsika, an experienced Aquaculture and Fisheries specialist and Deputy Head of the Department of Aquaculture and Fisheries Science presented how these targets were met by the development of the national training manual for aquaculture in Malawi. Stakeholder involvement, inclusion of didactics, coaching and follow-up loops have generated significant training success. The Principal of the Malawi College of Fisheries, Dr. Letson Yoyola Phiri, explained to the highly interested audience, how this content has led to a fully-fledged Technical Vocational Educational Training, in short TVET curricula. The pilot of this curriculum with

356 students this year was a great success. A very different approach for outreach and extension work was presented by Mrs. Mazuba Mwanachingwala (advisor at the Fish for Food Security project) and Mr. Misheck Nyirongo (Khumbilo Agro-ecology Media Services). Corona-related restrictions in Zambia did not allow personal interaction between trainers and trainees, why a radio show was developed to bring training content over long distances to those in need.



Mrs. Mazuba Mwanachingwala from the Department of Aquaculture and Fisheries Science presenting the approach of implementing aquaculture trainings in Malawi. © Jason J. Mulikita/ GIZ

Although such radio programs cannot provide hands-on experiences, they were taken up with great interest. People came together to listen to technical radio sessions, radio listening groups were formed, and training content was discussed after. The room filling audience was eager to delve deeper into the topic, but due to the tight schedule, the chair had cut the discussion short. In the next slot, the team from India's Sustainable Aquaculture for Food and Livelihood project presented on multiplying knowledge on a larger scale. Mr. Pratap Sinha, the project lead, emphasized the need for self-financed roll-out concepts and provided valuable insights, on how capacity building can be scaled up to reach many thousands of beneficiaries. Finally, the chair discussed with Mr. Fraser Kumwenda, the Director of KA Small Enterprises and member of the Board of

Directors at Innovative Fish Farmers Network Trust (IFFNT) what an aquaculture practitioner, like him, thinks about the trainings of GIZ. Mr. Kumwenda explained his experiences with the Aquaculture Business School (ABS) and how this approach has changed the mindset of the participants. Trainees were no longer just recipients of knowledge, but active contributors to the trainings. Farmers contributed space, food and drinks for the trainings and even part of the training content. This concept made the Aquaculture Business School so successful. The ABS is now taken up by IFFNT, to provide extension services in Malawi. After the slightly delayed closing words by the chair, the audience continued their discussions and this side event has not only shown the importance but also the great interest in this topic across countries and continents.



The Team of GP Fishs SAFAL project in India prepared a lively and interactive presentation. Team leader Pratap Sinha shares his experience with his self-financed roll-out concept. © Jason J. Mulikita/ GIZ



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Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH
Friedrich-Ebert-Allee 36 +40
53173 Bonn, Germany

T +49 152 90012274
F +49 61 96 79-11 15
E GVFisch@giz.de
I www.giz.de

Editorial and design:

Friederike Sorg, Moses Kabwe, Bettina Renner, Eunice Namwizye
Linda Weber, Jens Kahle and Lukas Novaes Tump

Translation:

Ekembahoaka Irajanaahary

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