Africa Center of Excellence in Aquaculture and Fisheries Science (AquaFish)

Annual Report – Year 1 (Nov 2022 to March 2024) for the ACE II - Additional Financing (AF)

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EXECUTIVE SUMMARY

The Africa Center of Excellence in Aquaculture and Fisheries Science (AquaFish), established in 2016 and funded by the World Bank Group, has been key in addressing agri-food system challenges in Malawi and the Eastern and Southern Africa (ESA) region. Building on the success of its previous ACE II project, AquaFish secured additional financing under ACE II-AF (2022-2025) to promote Integrated Agriculture Aquaculture (IAA) practices to enhance farm returns and create more agri-commercial enterprises.
AquaFish's key achievements under ACE II-AF include enrollments in short courses, master's, and PhD programs, with significant regional participation and female representation. Over the reporting period (Nov 2022 to March 2024), AquaFish had enrolled a total of 319 participants in 9 short courses facilitated targeting industry players, entrepreneurs, faculty, students, and local farmers at various levels. These courses that were designed to address critical needs in the agri-food sector, saw the participation of multiple African countries such as Botswana, Ethiopia, Ghana, Kenya, Malawi, Namibia, Tanzania, and Uganda. Furthermore, 72 Master's students and 21 PhD students had been enrolled among these students, 41% were female, reflecting AquaFish's commitment to gender inclusivity. The center offered 33 scholarships to students at PhD (6) and master's level (27) and secured additional support from the Gambia government, enabling the enrollment of 7 MSc students from Gambia, further enhancing its regional impact. Facilitation of knowledge exchange and capacity building was also key in year 1 of ACE II AF project. AquaFish conducted 31 exchange visits, hosting faculty members and PhD students from various countries and Universities as well as sending its own staff and students for exchange visits. Participants in the program were engaged in teaching, research, delivery of short courses and seminars. 9 seminars were conducted under the program.

AquaFish also established strategic partnerships through Memoranda of Understanding (MoUs) with various institutions and companies, both public and private. During the reporting period, AquaFish had signed nine MoUs with partner institutions. These partnerships facilitated knowledge sharing, innovation, and shared learning opportunities. Additionally, AquaFish contributed to 48 internationally recognized research publications, with 44 featuring regional co-authorship, advancing knowledge dissemination in the agrifood systems sector.

AquaFish generated $365,212.90 in externally generated revenue, laying the groundwork for financial sustainability and self-reliance. Furthermore, the center made some progress in accreditation, with efforts directed towards enhancing the quality of its programs. While no accreditation had

been obtained during the reporting period, AquaFish had initiated processes for departmental self-assessments and curriculum reviews in preparation for national accreditation by the National Council for Higher Education (NCHE).

These achievements underscore AquaFish's dedication to promoting education, research, and collaboration for sustainable agricultural development in Malawi and the ESA region. Despite notable achievements, challenges such as currency devaluation, funding delays, and resource constraints were encountered. Lack of clarity on some Performance Based Contracts (PBCs) including incubation and online short courses hindered progress.

1. INTRODUCTION

The Africa Center of Excellence in Aquaculture and Fisheries Science (AquaFish) established in August of 2016 is a Lilongwe University of Agriculture and Natural Resources (LUANAR) Center funded by the World Bank Group and has been working to produce fit-for-purpose human resources for the 21st Century Eastern and South Africa (ESA) region. The center has through its 5-year existence identified various gaps in the agri-food systems of Malawi and the region and has played a prominent role in addressing these challenges. With successful implementation of ACE II project (2016-2023), AquaFish center managed to secure additional financing (AF) from the World Bank under ACE II-AF (2022-2025). ACE II-AF aims at fostering Integrated Agriculture Aquaculture (IAA) practices among segregated fish, crop and livestock farmers to ensure diversified and improved farm returns consequently leading to the creation of more fish-crop-livestock enterprises (SMEs) for agri-commercialization. Operating within the sub-Saharan agriculture sector, the centre and its stakeholders from various fisheries and agricultural value chains have identified a need for a multi-disciplinary and holistic approach in addressing food insecurity and agricultural structural transformation challenges in the region. Therefore, strategies focusing on agri-food production from integration of fish-crop-livestock has been the Centre's focus.

AquaFish has also established that structural change of regional fish-crop-livestock value chain will mostly depend on SMEs that will cumulatively industrialize the sector. The proposed interventions under the new ACE II-AF aim at transforming the agri-food systems in Malawi and the region broadly through capacity building at various levels, including community level, putting greater emphasis on entrepreneurship and agribusiness, and creating an enabling environment through policy analysis and advocacy. ACE II-AF has three main priority areas that will help in strengthening current efforts in agro-industrialization and commercialization for improved food and nutrition security at household, community, national and regional level. These include:

1. Capacity building at community, industry and academia level in agri-food Systems with focus on integrated Fish-Crop-Livestock food production systems.
2. Entrepreneurship and Agribusiness.
3. Policy analysis and advocacy

1.1. Objectives Of The Report

The aim of this project annual report is to provide a comprehensive overview of the project's activities, achievements, challenges, and lessons learnt over the November 2022 to April 2024 Implementation period.

Specifically. the report aims to

- Document progress towards achievement of project objectives.
- Identify challenges and lessons learnt for future improvement.

2. IMPLEMENTATION PROGRESS

The following sections highlight progress made by the AquaFish Center toward achievement of project activities covering the period between November 2022 to April 2024. The achievements are highlighted at 2 level: Performance Based Contracts (PBCs) and Key deliverables.

2.1 PBCs based achievements

2.1.1 PBC 2.1 NEW STUDENTS ENROLLED IN THE AGRICULTURE ACES IN PHD, MASTER'S PROGRAMS AND SHORT COURSES.

This PBC measures the total number of short courses provided by the Centre, in collaboration with the government, private sector, research institute, and the University. It also measures the number of African students, particularly females, from outside the ACEs-host country who (i) successfully completed at least one academic year for a master's program and (ii) received an approval of a student's PhD research proposal. Particular attention is given to female African students from outside the ACEs-host country.

2.1.1.1 Short courses

In the reporting period (Nov 2022 to April 2024), there were 319 participants enrolled under the Short-Term Courses against the target of 578. Specifically, 8 short courses were conducted at the national level and additional 1 at the regional level.

Short Courses at National Level	Short course at Regional Level
1. Aquaponics and Black solder fly production 2. Aquaponics and Black solder fry system fabrication 3. GIS and remote sensing 4. Hands on scientific writing 5. Integrated Soil Fertility Management 6. Nanotechnology and applications in Food, Agriculture and Fisheries 7. Pond Based Breeding Technology 8. Transforming Aquaculture Knowledge into Prosperity	9. Poultry and rabbit production

FIGURE 1: (A)AQUAPONICS SYSTEMS FABRICATION TRAINING AND (B)PARTICIPANTS SHOWCASING CERTIFICATES OF COMPLETION AFTER NANOTECHNOLOGY SHORT COURSE

These short courses were designed to cater to industry players, entrepreneurs, faculty, students, and local farmers at various levels. The student enrollment for short courses included participants from Botswana (1), Ethiopia (2), Gambia (1), Ghana (1), Kenya (3), Malawi (236), Mozambique (2), Namibia (36), Tanzania (5), and Uganda (1). Notably, the short courses achieved a female enrollment rate of 47% (149).

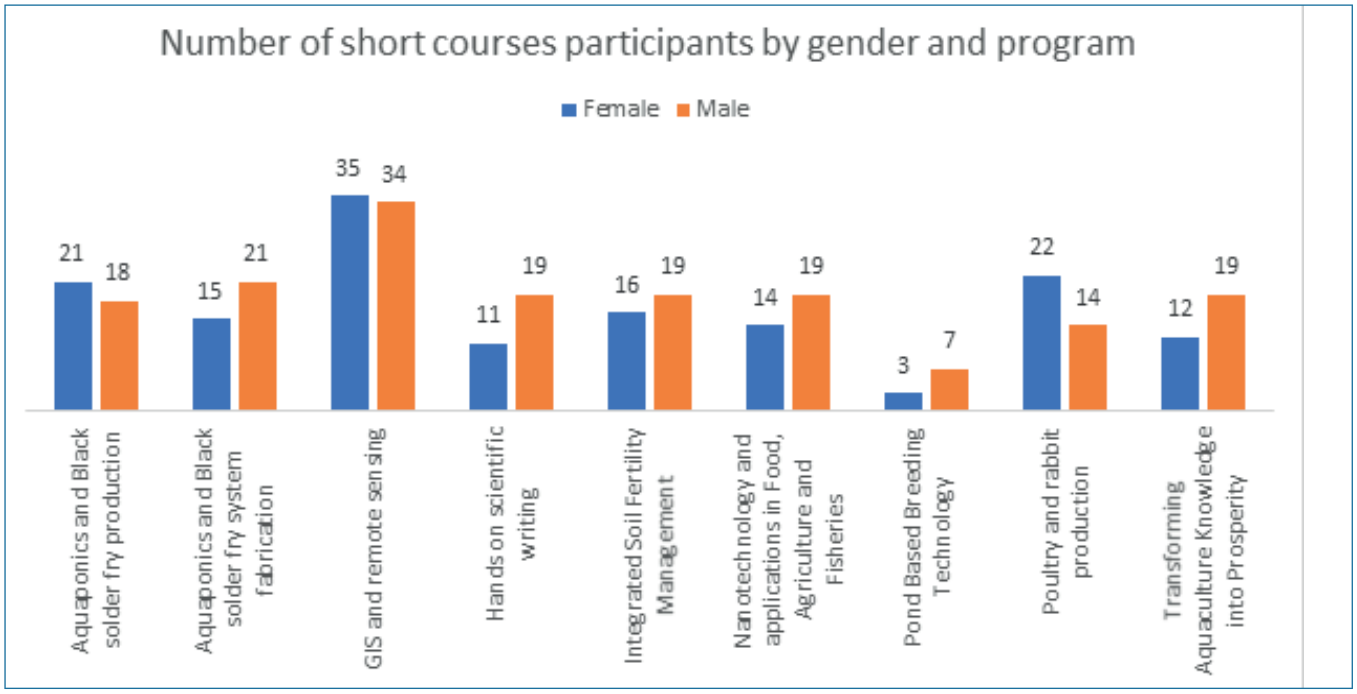

FIGURE 2: NAME OF SHORT COURSES AND NUMBER OF PARTICIPANTS BY GENDER.

The regional enrollment to short courses was at 55 of which 32 were females.

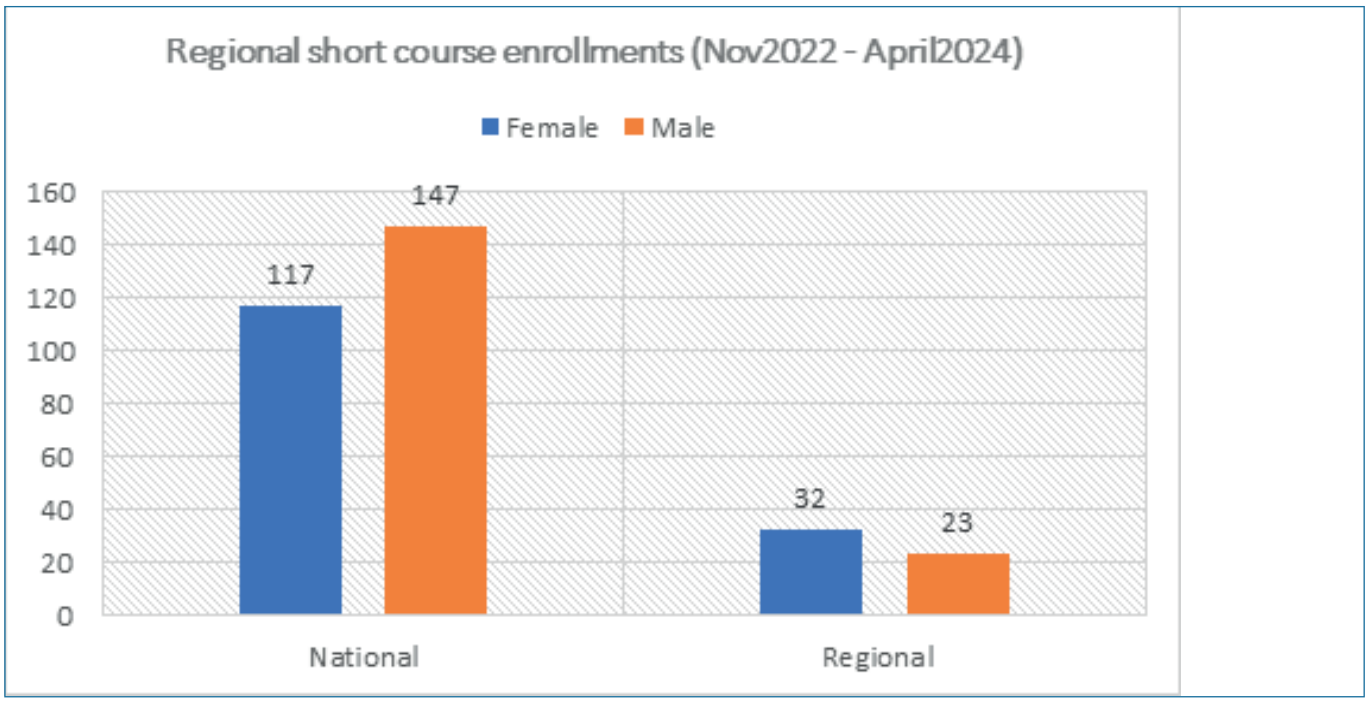

FIGURE 3: REGIONAL ENROLLMENTS IN SHORT COURSES

2.1.1.2 Master's Program

The center has enrolled 72 master's students, against the target of 75, and 44% of them are female. 44% of these students, totaling 32, come from the region including Ethiopia, Gambia, Kenya, Malawi, Mozambique, Tanzania, Uganda and Zambia this shows that the center is doing well in attracting students from different countries, making it a recognized place for learning in the region.

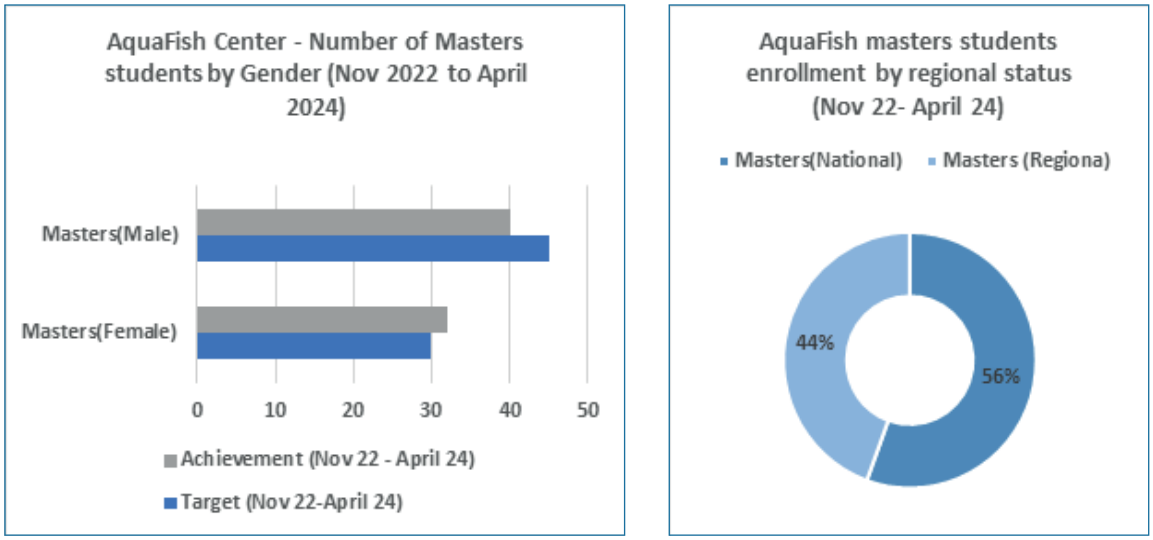

FIGURE 4: AQUAFISH MASTERS ENROLLMENT

PhD program

Additionally, 21 PhD students were enrolled, out of the 21 students against the target of 35, 6 were female, and 15 were drawn from the region.

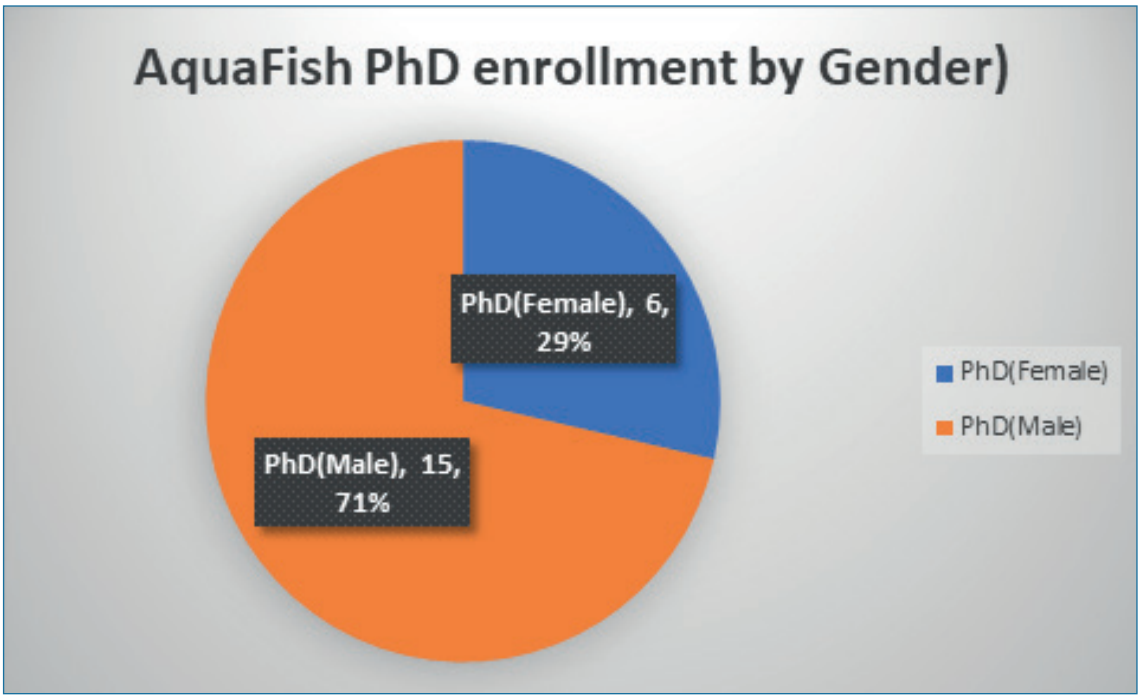

FIGURE 5: PHD ENROLLMENTS AT AQUAFISH NOV 2022 TO APRIL 2024

2.1.1.3 Additional funding for students' enrollment

With a good track record from ACE II, governments like the Gambia have trusted AquaFish Center with their funds to provide further support towards its postgraduate programs. AquaFish secured scholarships from the Gambia government, enabling the Center to welcome 7 MSc students from Gambia to study in Aquaculture and Fisheries in 2022/2023 academic year. This achievement not only reflects the trust placed in AquaFish by governments but also highlights the center's dedication to providing opportunities for students to pursue higher education in fields crucial to the region's agricultural sector. By securing external funding sources, AquaFish continues to expand its reach and impact.

2.1.2 PBC 3.1 QUALITY ACCREDITATION FOR AGRICULTURE EDUCATION PROGRAMS

This PBC measures the quality of agriculture Masters and PhD programs quantifying the number of programs accredited nationally, regionally and internationally by a body satisfactory to IUCEA and the World Bank.

At the time of reporting, the Center had initiated processes for departmental self assessments and was working with departments to review curricula in preparation for national accreditation of programs by the National Council for Higher Education (NCHE) which will be conducted in May 2024. NCHE is the national accrediting body responsible for policy and certification on quality education at Tertiary Level education. The programs are listed in Table 1.

TABLE 1: PROGRAMS WITHIN DEPARTMENTS UNDER AQUAFISH CENTRE

Aquaculture and Fisheries Science Department	Crop and Soil Sciences Department
1. PhD in Aquaculture and Fisheries Science (taught) 2. PhD in Aquaculture and Aquatic Management (research) 3. PhD in Fisheries and Ecosystem management (research) 4. MSc in Aquaculture and Fisheries Science 5. MSc in Aquatic Animal Health and Ecosystem Management	1. PhD in Crop and Soil Science (by research) 2. MSc in Agronomy 3. MSc in Plant Breeding 4. MSc in Soil Science 5. MSc in Seed Systems 6. MSc in Crop Protection 7. MSc in Sustainable Agriculture
Animal Science Department	**Food Science and Technology Department**
1. MSc in Animal Science	1. PhD in Food Systems 2. MSc in Food Science and Technology

2.1.3 PBC 4.1 MOUS ON PARTNERSHIPS FOR COLLABORATION IN APPLIED RESEARCH AND TRAINING ENTERED BY AGRICULTURE ACES

This indicator assesses the extent of partnerships established for collaborative efforts in applied research and training, as evidenced by signed Memorandums of Understanding (MoUs) and proposals outlining a partnership work program spanning at least two years.

During the implementation phase, the center had signed 9 MOUs with the public and private sector on partnerships for collaboration in applied research and training. This enhanced the center's capacity to

conduct high quality applied research, which is relevant to agri-food system challenges. These MOUs are, on average, 2-year agreements with 2-year work plans for each partner. The MOUs specifically target the following areas:

- Research and/or training.
- Joint grant applications.
- Lectures, symposia, international meetings, conferences, and workshops;
- Exchange of researchers, students and interns.
- Exchange of information, teaching materials and equipment.
- Mutual use of research space and facilities.
- Hosting of student internship and research fellows
- Jointly mobilize students, staff and resources

Out of these, seven were submitted for verification in October 2023. These MoUs underwent review to incorporate feedback from the World Bank for verification in March 2024.
Table 2 shows partner institutions/companies with which MOUs were signed.

TABLE 2: PARTNER INSTITUTIONS WITH MOUS

No	Name of institution	Country	Sectors
1	Invegrow Ltd (Mw	Malawi	Private
2	Aquaponic 4 Life Ltd	Malawi	Private
3	Apoche Greenfield	Malawi	Private
4	Summermoon Ltd	Egypt	Private
5	University of Namibia UNAM	Namibia	Public
6	University of Ibadan	Nigeria	Public
7	Lilongwe Technical College – LTC	Malawi	Public
8	University of Eldoret	Kenya	Public
9	Norwegian University of Life Sciences	Norway	Public

2.1.3.1 Functionality of MoUs

The Center had so far collaborated and hosted short courses with the University of Namibia on Poultry and Rabbit Production, with Aquaponics for Life on Fish production using Aquaponics and Black Soldier Fly as an alternative protein source to fish meal and with Lilongwe Technical College on Aquaponics and Black Soldier Fly Systems Fabrication. Further, the center collaborated with Invegrow to conduct a seminar on cannabis and has conducted several meetings to draft a cannabis research agenda. The Center is also working with Apoche Farm on fish feed research and production.

FIGURE 6: AQUAFISH PARTNER; AQUAPONICS FOR LIFE DELIVERING A SHORT COURSE

The table below presents a summary of MoUs signed with partner institutions/companies.

TABLE 3: SUMMARY OF MOUS SIGNED TOWARDS ACHIEVING PBC 4.1

PBC	Indicators		Achievement (Nov22–April2024)	Target (Nov22–April 2024)
4.1	MOUs on partnerships for collaboration in applied research and training	Total	9	19
		Public	3	10
		Private	6	9

2.1.4 PBC 5.1 PEER-REVIEWED JOURNAL PAPERS OR PEER-REVIEWED CONFERENCE PAPERS PREPARED FOR THE AGRICULTURE SECTOR COLLABORATIVELY WITH NATIONAL, REGIONAL OR INTERNATIONAL CO-AUTHORS.

This PBC records the number of internationally recognized research publications produced by the AquaFish including with regional co-authors when the paper is accepted by a peer-review journal or is in an accepted peer-reviewed conference paper. At the time of reporting, AquaFish had contributed to 48 internationally recognized research publications, with 44 of them featuring regional co-authorship.

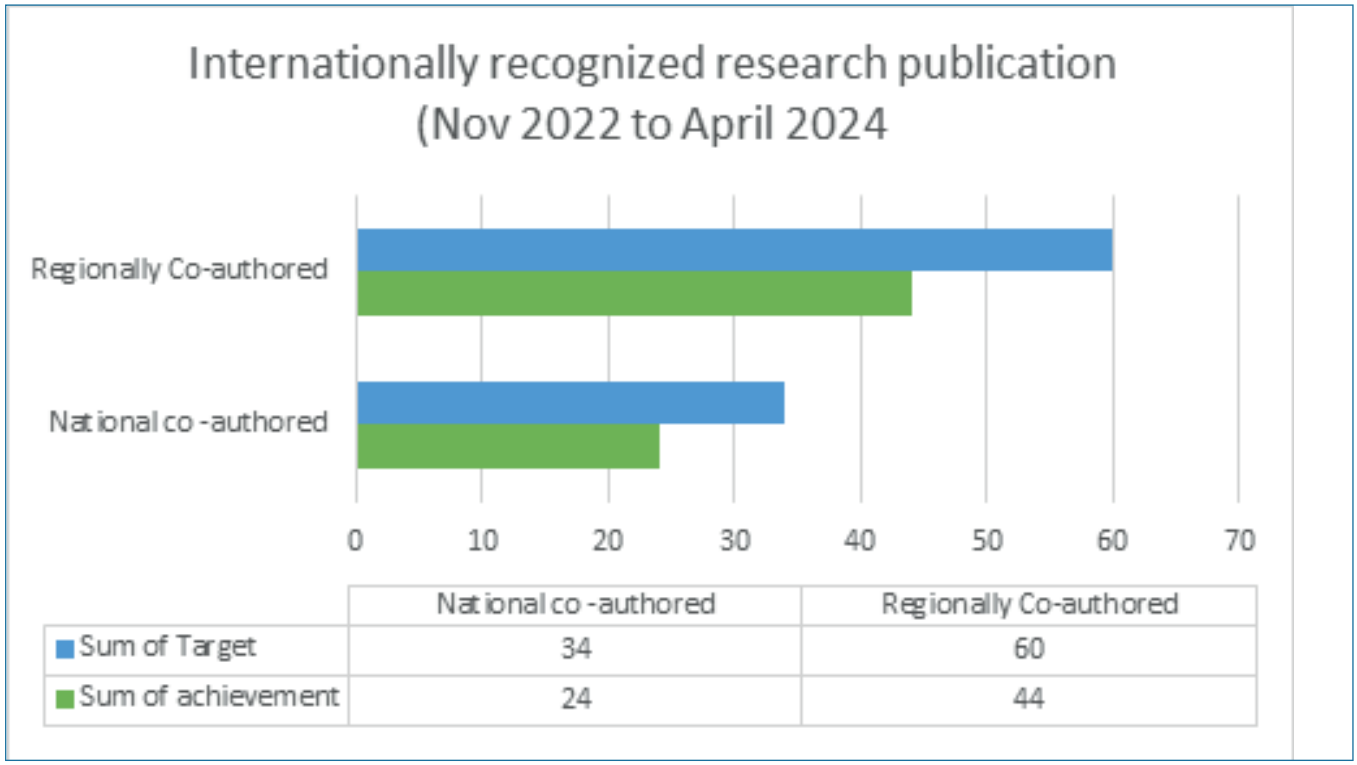

FIGURE 7: PROGRESS ON INTERNATIONALLY RECOGNIZED RESEARCH PUBLICATIONS

2.1.5 PBC 6.1 FACULTY AND PHD STUDENT EXCHANGES TO PROMOTE RESEARCH AND TEACHING IN AGRICULTURE ACES

This PBC quantifies the number of faculty members and PhD students hosted by AquaFish from other institutions, as well as where other institutions host faculty members from LUANAR, either within Malawi, the SADC region, or internationally, for a minimum period of two weeks for teaching, research, or information-sharing (seminar) collaboration purposes.

During its first year, AquaFish had hosted a total of 12 faculty members and 1 PhD student and supported the travel of 15 faculty members and 3 PhD students to other institutions for teaching and research purposes. This resulted in a total of 31 exchanges, including 5 female participants, as illustrated in the table below.

TABLE 4:PROGRESS ON NUMBER OF FACULTY STAFF AND STUDENT ENGAGED IN EXCHANGE PROGRAM IN YEAR 1

PBC	Indicators		Achievement (Nov22-April2024)	Target (Nov22-April 2024)
6.1	**No. of faculty & PhD student exchange**	Total	26	31
		Female	11	5

FIGURE 8: DR. CHALUMBA SIMUKOKO FROM ZAMBIA ON A STAFF EXCHANGE VISIT AT THE CENTER. DR. SIMUKOKO WAS TEACHING PHARMACOLOGY TO STUDENTS ENROLLED IN THE MSC PROGRAM IN AQUATIC ANIMAL HEALTH AND ECOSYSTEM MANAGEMENT.

The Participants under the program were from various countries in Africa, including the SADC region. The exchange visits involved individuals from Zambia, Nigeria, Malawi, Germany, Zimbabwe, Uganda, Kenya, Ethiopia and South Africa. Additionally, some participants delivered seminars across various fields and one delivered a short course on Nanotechnology and its application in food, fisheries and agriculture. Below are the seminars delivered by participants under the exchange program:

1. Safer fish in your Plate: The potential of Lactic acid bacteria as a bio-preservative for Fresh Fish
2. Science-Driven Technologies: From basic bio-molecular interactions to devices and tech tools for disease detection and Management
3. Cannabis opportunities in Malawi: feasibility and clearing misconceptions.
4. Completion of graduate training (Duration and rates)
5. Emerging technologies in Animal Science
6. Health value enhancement of the red meat fatty acid profile: Emerging dietary stratagems
7. Food and waste beyond the farm gate - The case of Banana and Tomato value chains in Zimbabwe
8. Beef carcass evaluation systems in SADC are biased against indigenous breeds: The way forward
9. The Role of Seed Industry in Agricultural Development

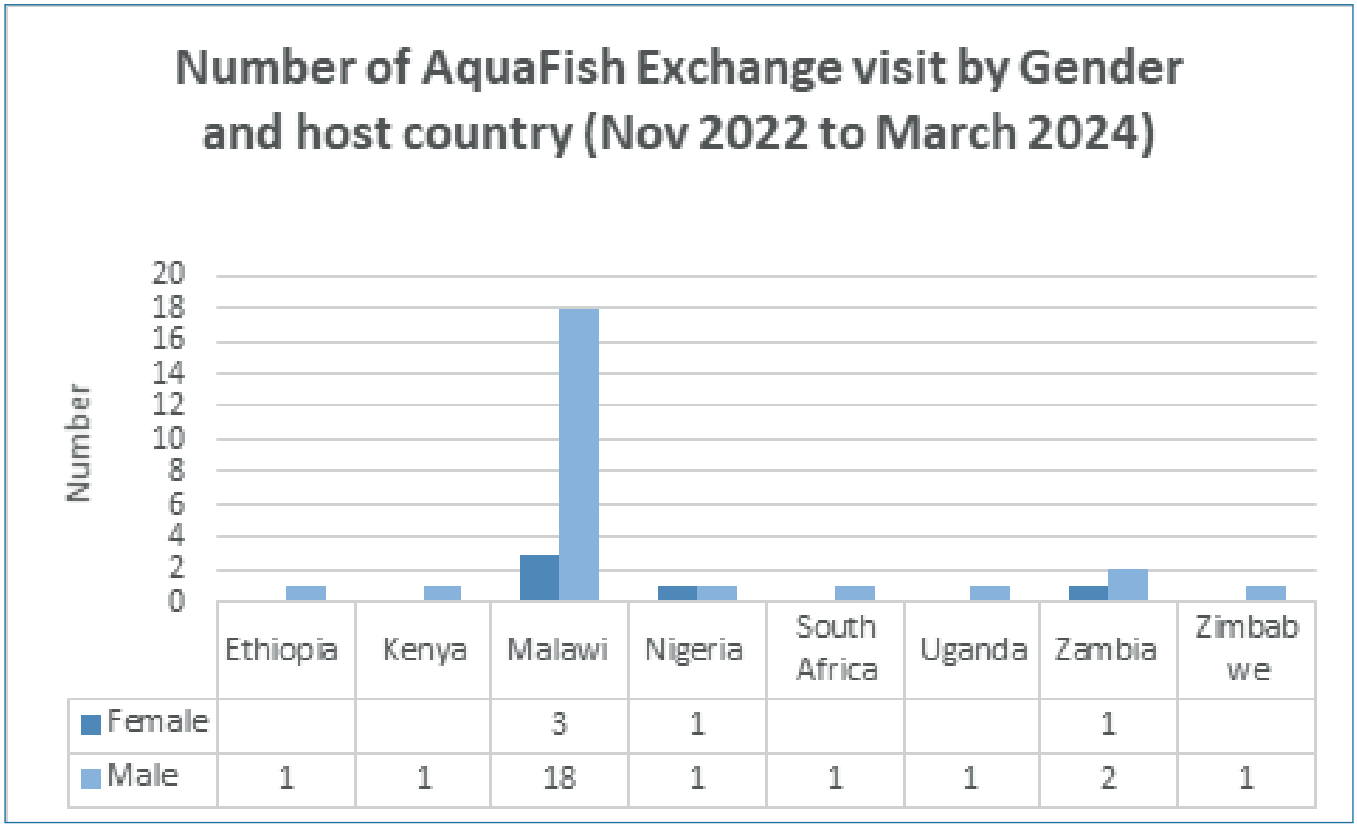

FIGURE 9: EXCHANGE VISITS BY GENDER AND COUNTRY AT AQUAFISH CENTER

2.1.6PBC 7.1 AMOUNT OF EXTERNALLY GENERATED REVENUE BY THE AGRICULTURE ACES

The Performance-Based Contract (PBC) assesses the amounts generated externally as revenue, which includes income from various sources such as tuition fees, other student fees, joint research endeavors, consultancy services, fundraising activities, donations, or any other external sources deposited into the ACE's account.

As of the reporting period, a total of US$365,212.90 had been generated under the ACE II AF project. This figure encompasses the diverse revenue streams derived from external sources, reflecting the effectiveness of AquaFish's initiatives in attracting financial support from a range of stakeholders.

TABLE 5: PROGRESS TOWARDS ACHIEVING PBC 7.1 IN YEAR 1

PBC	Indicators	Unit of Measure	Target (Nov22-April 2024)	Achievement (Nov22-April2024)
7.1	Externally generated revenue	USD	1,237,500	365,212.90

2.1.7PBC 9 NUMBER OF ENTERPRISES INCUBATED AND SPIN-OFFS REALIZED.

The PBC evaluates the effectiveness of AquaFish initiatives in fostering entrepreneurship by measuring the number of enterprises incubated and spin-offs achieved through the training of students and/or engagement with communities/end-users. However, during this reporting period, no enterprises were successfully incubated.

One of the key challenges encountered was the lack of clear guidelines from the Inter-University Council for East Africa (IUCEA) regarding the implementation of this PBC. As a result, there was uncertainty on how to proceed with crucial steps such as initiating calls for proposals, identifying potential incubates with viable products or ideas, and establishing enterprises in line with the outlined activities under this PBC.

2.2 Deliverable based achievements

2.2.1OUTREACH/LINKAGES

One of the expected outcomes of ACE II AF project is to enhance linkages between the universities and relevant stakeholders in agri-food systems. This deliverable aimed to organize dissemination and knowledge sharing conferences, procure 1 project vehicle for mobility and support the EMSP in implementation sites, including adhering PSIP Reports.

During the first year, AquaFish participated in organizing a dissemination and knowledge-sharing conference focusing on talent and innovation for potential upscaling. This conference facilitated knowledge exchange, networking, and innovation among stakeholders involved in the project. AquaFish also procured a project vehicle to support implementation through field visits, material transportation, and logistical support.

The center also participated in three meetings with PSIP to ensure adherence to PSIP reports. Additionally, an Environmental and Social Management Plan (EMSP) for the project was drafted and is being finalized to serve as a mechanism for monitoring and addressing environmental and social concerns. This ensures that project activities align with World Bank and national environmental safeguards.

Furthermore, the center signed nine MOUs with the public and private sectors for collaboration in applied research and training. This enhanced the center's capacity to conduct high quality applied research relevant to agrifood systems challenges.

FIGURE 10: AQUAFISH AT TALENTS AND INNOVATION CONFERENCE

2.2.2 FACILITIES AND EQUIPMENT

This deliverable aimed to create a conducive environment for project implementation, learning, and research. During the first year, plans were made for the procurement processes of office furniture and equipment, and the procurement of ICT equipment was initiated. Contribution toward completing Phase 1 of the ACE II Center building, which was initiated during the ACE II project, has been made. Additionally, plans were drafted for the establishment of commercial Aquaponics Facilities (School of Aquaponics) and a Cannabis Irrigation System.

2.2.3 EDUCATION

This deliverable aimed at supporting various capacity building initiatives for scholars in Malawi and the region. The AquaFish Center awarded a total of 33 scholarships: 6 at the PhD level and 27 at the master's level, constituting 29% and 38% of the total enrollment, respectively. Additionally, the AquaFish Center secured further scholarships through partnerships with other institutions. Details regarding the distribution of scholarships by partner institution and level of study are provided in Table 6.

Scholarship	PhD	MSc	Total
DAAD	4	8	12
ACE II AF	6	27	33
IUCEA	0	5	5
ECARESA	0	10	10
The Gambia	0	5	5
Total	10	55	65

Refer to PBC 3.1 for progress toward accreditation of center programs.

2.2.4 TRAINING

This deliverable aimed to connect stakeholders involved in the project with partner institutions and regional agrifood industries, provide short courses to various stakeholders, enhance capacity in product development, safety, and marketing, support student SME incubation, train finance, procurement, and project team members in financial and procurement management systems, and conducted grant proposal writing workshops, among other activities. Partnerships for product development had been established, but actual product development had not commenced. Student SME incubation had not yet begun. For short courses and staff exchange program, refer to PBC 2.1 and PBC 6.1.

2.2.5 APPLIED RESEARCH

This deliverable aimed to develop a research agenda for IAA systems, support workshops to review innovations for scaling up through technology, conduct cannabis related research, facilitate publications, strengthen existing regional research capacities in IAA systems especially Aquaculture and Cannabis value chains, facilitate research space sharing and researcher exchange programs among responsible institutions, and obtain a Cannabis Annual Research Licence.

At the time of reporting, several meetings had been conducted towards drafting the research agenda for IAA. A draft Cannabis research agenda had been prepared. A workshop to review talents and innovations for possible scaling up had been held for LUANAR alumni, staff, and students. Additionally, 48 publications had been collated and supported under the project. Through its partnerships, the project had gained access to various research inputs, such as cannabis seed cake, and had initiated research space sharing and researcher exchange programs with various research institutions, including partner institutions like A4L and LTC. Furthermore, the project had successfully acquired an annual License for Cannabis research.

3. FINANCIAL PERFORMANCE

Throughout the year, the World Bank disbursed a total of US$1,046,020.63, constituting 17% of the total funding dedicated to advancing AquaFish initiatives. This significant disbursement underscores the institution's unwavering commitment to fostering sustainable development in agrifood systems that the center is advancing. Of this disbursed amount, US$543,972.30 was allocated to various project activities, signifying a utilization rate of 52% and leaving a balance of US$502,048.33. These funds were invested in initiatives aimed at transforming the agri-food systems in Malawi and the region broadly through capacity building at various levels, including community level, putting greater emphasis on entrepreneurship and agribusiness, and creating an enabling environment through policy analysis and advocacy.

Furthermore, the institution successfully secured an additional US$365,212.90 from external sources to complement its efforts. Of this external funding, US$215,576.33 was efficiently utilized across a range of activities, ranging from capacity-building programs to research initiatives leaving a balance of US$149,636.57.

4. LESSONS LEARNT

The following lessons were learnt during the first year of implementing the ACE II AF project:

- **Investing in training and skill development:** The AquaFish Center's commitment to training and capacity-building for both project team members and stakeholders yielded multifaceted benefits. Not only did it enhance the skills, knowledge, and capabilities, but it also laid a robust foundation for the project's long-term success.
- **Engaging stakeholders from the beginning of the project:** Early and proactive engagement with stakeholders, particularly those within AquaFish departments, proved instrumental in building trust and addressing potential concerns. The engagement with stakeholders assisted with building the trust and address concerns and allowed for understanding their needs, expectations, and perspectives for better alignment of their interests to project activities. Furthermore, effective communication with partner outside LUANAR ensure everyone was aligned with project goals and activities which enabled successful establishment of partnerships through MoUs.
- **Functionality of partnerships:** Capitalizing on partnerships with other organizations, institutions, or experts allowed the project to access additional resources, expertise, and networks which facilitated knowledge sharing, innovation, and shared learning opportunities. For instance, the project was able to engage expertise from Aquaponcs for Life (A4L) to train participants in the short course on Aquaponics and Invegrow to deliver a seminar on Cannabis. LUANAR experts also collaborated with University of Nambia experts to deliver a short course on Poultry and Rabbit production in Namibia.

FIGURE 11: DR SAFALAOH FROM LUANAR IN NAMIBIA FOR A SHORT COURSE ON POULTRY AND RABBIT PRODUCTION

5. CHALLENGES

1. Impact of currency devaluation

In September/October 2023, the Malawian Kwacha was devaluated at 44% against the United States Dollar. This caused rocketing price inflations by service providers which hindered deliverables on some project activities like procurement of office furniture and equipment and development of project structures, thereby affecting the progress of certain project activities.

2. Lack of clarity on some PBCs

One other challenge faced during the reporting period was the lack of clarity surrounding some PBCs such as PBC 9 on the Number of enterprises incubated and spin-offs realized Incubation. Despite the emphasis on fostering entrepreneurship and agribusiness, AquaFish Center encountered challenges in successfully incubating enterprises during the reporting period. There was also not a clear direction on conducting blended and online short course This lack of clarity delayed on set of activities towards achievement of PBCs.

3. Delay in securing project funds

The project also experienced delays in securing funding for implementation, with funds being received in March 2023 despite the official commencement in November 2022.This affected the start in implementation of project activities and hindered delivery on reaching certain PBCs and deliverables

4. Shortfall in enrollment targets

Despite efforts to attract students from various countries and regions, AquaFish Center fell short of its enrollment targets for certain programs. While progress was made in enrolling students at both the Master's and PhD levels, achieving the desired enrollment numbers proved to be challenging. This shortfall could potentially impact the Center's ability to produce fit-for-purpose human resources for the agri-food systems in the Eastern and South Africa region as intended.

5. Delay in accreditation processes

The process of accreditation for agriculture education programs faced delays due to delayed initiation of departmental self-assessments and curriculum reviews for national accreditation by the National Council for Higher Education (NCHE), affecting the Center's ability to fully demonstrate the quality of its academic programs.

6. Resource constraints

To deliver on some activities, skilled personnel were required. For example, the project was missing resource personnel in development of a solar storage facility. However, this expert could not be contracted on time to deliver, and this deliverable was delayed.

7. Operationalizing partnerships

While AquaFish Center successfully established partnerships with public and private sector entities through Memorandums of Understanding (MoUs), operationalizing these partnerships posed challenges. Limited progress was made in implementing collaborative activities outlined in the MoUs, such as joint research, exchange programs, and capacity-building initiatives. Overcoming barriers to effective partnership implementation is crucial for leveraging resources and expertise to address agrifood system challenges effectively.

6. CONCLUSION

The project is on track towards achieving its targets for PBCs and key deliverables for the first year of the project. Overall, the project had a wide reach of regional and national students' representation with 72 students enrolled for MSc and 21 students for PhD within the first year.

Teaching and research collaborations between the Centre and institutions both local and global, were also key, as the project saw 31 faculty members and students engaged in the exchange program.
The Centre also set a good foundation for partnerships and signed 9 MoUs signed with both public and private sectors. Through these, it embarked on collaborative research on novel and innovative solutions within the Aquaculture and agricultural value chains e.g., use of Cannabis in aquaculture and regional trainings in agricultural value chains.

In terms of infrastructure development, phase 1 of AquaFish Centre building is near completion.
However, AquaFish was unable to initiate some of the PBCs in year 1. For example, PBC 9. on incubation was not started because of lack of guidance from IUCEA.
Lessons learnt from the first year of the ACE II AF implementation have provided invaluable guidance for ongoing activities.

The Africa Center of Excellence in Aquaculture and Fisheries Science (AquaFish)

www.luanar.ac.mw/aquafish