



# INNOVATION PLATFORM REPORT MALAWI

**Piloting Inclusive Business and Entrepreneurial Models for Smallholder Farmers and Poor Value Chain Actors in Zambia and Malawi**

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## About WorldFish

WorldFish is an international, not-for-profit research organization that works to reduce hunger and poverty by improving fisheries and aquaculture. It collaborates with numerous international, regional and national partners to deliver transformational impacts to millions of people who depend on fish for food, nutrition and income in the developing world. Headquartered in Penang, Malaysia and with regional offices across Africa, Asia and the Pacific, WorldFish is a member of CGIAR, the world's largest global partnership on agriculture research and innovation for a food secure future.

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# 1. Executive summary

The innovation platform workshop under the project 'Piloting inclusive business and entrepreneurial models for smallholder fish farmers and poor value chain actors in Zambia and Malawi' was held on 17<sup>th</sup> - 18<sup>th</sup> October, 2021, at the National Aquaculture Centre (NAC), Zomba. All the participants invited attended the workshop: 27 feed and hatchery operators, and 6 District Fisheries Officers (DFOs). The objective of this innovation platform was to bring together the feed and seed operators, and DFOs, to find solutions and mitigation strategies to the challenges and risks operators are facing in their businesses using the Political, Economic, Socio-cultural, Environmental, Legal (PESTEL) framework.

The key challenges elicited by feed operators included: exchange rate fluctuations and corresponding feed price fluctuations, high transportation cost of feed, the reliance on foreign feed manufacturers, high cost of feed, lack of political good will to invest in fisheries, and lack of infrastructure for local firms to manufacture quality feed in Malawi. To mitigate the risks of high feed prices and transportation costs, the operators agreed to work as a group to order feed directly from the manufacturers in Zambia instead of purchasing from local distributors. They however suggested that the government needs to invest in infrastructural development and provide incentives for local feed manufactures and or/ international company to set up manufacturing plants in Malawi.

The key challenges identified by the seed groups included: recycling of fingerlings by farmers, fish theft, high cost of feed, and drying of ponds due to climate change. Production and sale of sex reversed fingerlings may help reduce recycling of fingerlings by farmers, however the hatchery operators lack knowledge on sex reversal. The project team will be piloting sex reversal with some selected hatchery operators. To mitigate the menace of fish theft, the hatchery operators suggested the need to secure fish ponds and to involve the police and local government in establishing by-laws.

All the participants felt the innovation platform was very useful and for future sessions, there is need to engage the police, ministry of agriculture and have exchange visit with operators from Zambia. Future sessions could focus on sex reversal, marketing strategy, feed formulation, business mindset, financial management, credit and financing, group dynamics, manure and feeding regime, among others.

## 2. Introduction

The ‘Piloting inclusive business and entrepreneurial models for smallholder fish farmers and poor value chain actors in Zambia and Malawi’ project is funded by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The project goal is to establish pro-poor, gender and youth-inclusive business and entrepreneurial models that provide sustained access for smallholder fish farmers in Zambia and Malawi with productivity and profitability enhancing fish seed, feed and knowledge and increased access to fish for enhanced nutrition of consumers. In Malawi, the project is piloting thirty hatchery and feed operators with the aim to reach close to 1,000 farmers with feed, seed and training. The project is implemented in the Southern region of Malawi in six districts: Zomba, Blantyre, Mwanza, Thyolo, Mulanje and Phalombe.

The project’s outputs include:

- Output 1: Inclusive business and entrepreneurial models (IBEMs) established and functional for piloting to service local smallholder farmers
- Output 2: Innovation platforms with private and public actors established and functional
- Output 3: Innovative training materials on best management practices, business skills development, entrepreneurship
- Output 4: Assessments evaluating efficacy of the IBEMs, innovation platforms, and training materials and approaches

Through interactions with regional networks and investors, results from the pilot will be widely shared, contributing to scaling of aquaculture technologies within the sub-Saharan African region. The project facilitates progression along the FISH CRP impact pathway through the change mechanism “Private sector investment and replication of innovative business models in fish production, processing, and trade” towards the SLO targets.

The innovation platform aims to bring together private actors, public sector, feed and hatchery operators and other stakeholders in the aquaculture value chain to determine the various opportunities to support and supply inputs and services to local aquapreneurs and smallholder farmers. Specifically:

1. To determine efficient and sustainable strategies to reach smallholder farmers through the IBEMs and scale their investments

2. To facilitate dialogue among stakeholders in the aquaculture sector
3. Identify solutions to common problems that affect hatchery and feed operators
4. To develop strategies to achieve common goals to improve the sector.
5. To identify and harness opportunities in the sector

In Malawi, the innovation platform will be intergrated with the existing aquaculture roundtable currently hosted by GIZ.

### 3. The Workshop approach

The innovation platform was held on the 17-18<sup>th</sup> October, 2021, at the National Aquaculture Centre in Zomba. The platform hosted the feed and hatchery operators and the DFOs in the respective districts. 100% turn out rate was recorded for both the operators and the DFOs. The meeting started on the 17<sup>th</sup> October, 2021 in the afternoon. Welcoming remarks were delivered by Dr. Kanyumba, followed by presentations on:

- The goals of the projects
- The activities conducted by the project and future plans
- Objectives of the innovation platform
- Presentation of the PESTEL framework
- 4 break out groups for hatchery and feed operators to discuss the challenges and risks.

On the second day, the break out groups re-convened to find possible solutions for the identified challenges. All the feed operators from the two groups then came together to discuss the common challenges relating to continued feed supply and sustainability plans. All the hatchery operators similarly came together to find solutions on how to collect production data and technical challenges regarding fingerlings production.

Presentations by the four groups were done in plenary, highlighting the three key business challenges/risks and the identified solutions and mitigation strategies. A plenary discussion was then conducted.

Workshop evaluation forms were filled by the participants. The workshop ended with closing remarks from Dr. Kanyumba.

The sessions were conducted in Chichewa - the local language in Malawi, as some participants are not conversant with English. Translations were made when English language was used.

## 4. Welcoming remarks and introductory presentations

### Welcoming remarks

After the introductions led by Alinafe, Dr. Kanyumba, Country Director – Malawi, speaking in Chichewa, welcomed the participants and informed them that they should feel free to participate in the discussions and express their views. He assured them that WorldFish is committed to working with all the stakeholders. WorldFish works in a number of projects, and this project aims to address the challenges regarding lack of quality feed and seed, and will contribute to the national goals. He emphasised the need to work in collaboration since feed and hatchery operators, and fish farmers, need each other to sustain their businesses. He also thanked the participants for making themselves available for the platform even though it was a weekend, he also thanked the team from Zambia for the visit.

### About the project and the activities

Speaking in Chichewa, Alinafe provided a summary of the project goals, and the activities which have been done so far. Dr. Lundeba similarly added that the project aims to pilot decentralized models to facilitate the availability of seed and feed and knowledge through the feed and hatchery operators. The project also focuses in including youth, women and men. Alinafe mentioned the activities done so far under the project in Malawi include:

- 🐟 Broodstock collection and conditioning at NAC, disease screening was conducted in 2020
- 🐟 Assessment & selection of feed and hatchery operators in 2020
- 🐟 Training of Trainers conducted in February, 2021
- 🐟 Distribution of hatchery operators' materials including seine nets, hand nets, scoop net, hapas done in February, 2021
- 🐟 Project virtual launch on 21 May; 15 operators were selected representative
- 🐟 Business plan training in June, 2021
- 🐟 Broodstock distribution in June-74 brooders (44 female & 30 males).
- 🐟 procurement and distribution of feed for feed operators in August and September. Each operator received 58 bags (growers-29, starter-13 and pre-starter-16)

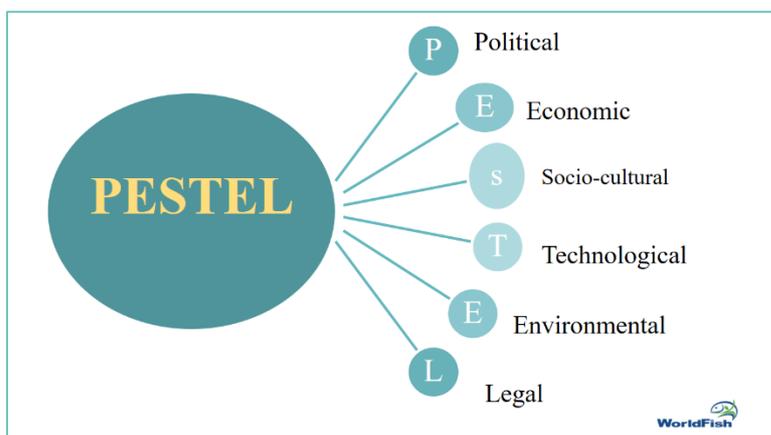
- Broodstock collection and conditioning at NAC in August – Yet to do disease screening. Each hatchery operator is expected to receive 110 brooders.
- Baseline survey in July
- Mentoring & coaching in September on business plans and hatchery operators
- Mentoring & Coaching in October, with Dr. Lundeba and Dr. Mwema

He highlighted that the plans for the remaining part of the year will focus on mentoring and coaching, and broodstock distribution.

### The Innovation Platform and PESTEL Framework

The presentation was made by Dr. Mwema and translated in Chichewa by Great Munthali (Zomba DFO). The objective of this innovation platform was shared to the participants which is to bring the feed and hatchery operators, and DFO, to find solutions to the challenges operators are facing or risk facing.

The PESTEL framework was presented to guide in identifying the key challenges and risks in the different categories (Political, Economic, Socio-ecological, Technological, Environmental and Legal). PESTEL is a tool that helps to identify challenges and risks that affect or may affect the business, and therefore find solutions and mitigation strategies.



## 5. Group Discussions: Challenges, risks and solutions

The PESTEL framework was used by the 4 groups (2 feed groups, and 2 seed groups) during the group discussions. The framework helped the participants to think of all the possible challenges and risks they face as a business.

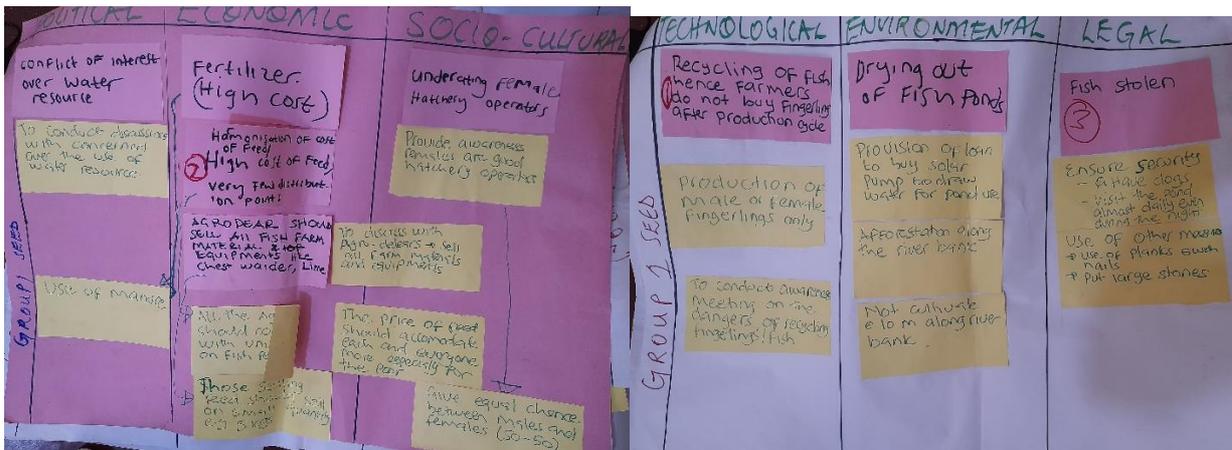
Each group was guided by at least one DFO, who was the facilitator for the group discussions. The group discussions were conducted in Chichewa, the DFOs summarized each point in English on the PESTEL framework canvas.

The groups also ranked three key challenges, the discussion of the solutions were conducted in order of priority to ensure the most pressing challenges are prioritised in light of time constraints.

The groups were provided with pink cards to indicate challenges; and yellow cards to indicate the solutions.

## Seed Groups

The three key challenges for the first seed group were: recycling of fingerlings by farmers, high cost of feed, and fish theft. The second group's top challenges were: Fish theft, drying of ponds, and high cost of feed.



Challenges/risks and solutions/mitigation strategies discussed by seed group 1



Challenges/risks and solutions/mitigation strategies discussed by seed group 2

The following are details of the key challenges and solutions, categorized and discussed by the two seed groups.

### **Political**

*Conflict over water resource:* There are cases where communities are fighting for same water sources, others for irrigation and others for home uses. In most cases, fish farmers suffer because they don't have political negotiation power for water use.

*Solutions provided:*

- To have open discussion with community members over use of water
- Need for civic education by the councilor via the village heads on water use and how to share the resource equitably.

### **Economic**

*Recycling of fingerlings, hence farmers do not buy fingerlings after one production cycle:* Most smallholder fish farmers recycle fingerlings, they therefore do not buy fingerlings affecting the economic performance of businesses for the hatchery operators.

*Solutions provided:*

- Production of sex reversed fingerlings
- To conduct awareness meetings on the dangers of recycling of fingerlings and brooders

*High cost of fertilizers and feed:* The cost of fertilizers and other inputs like feed is high impacting the profits

*Solutions provided:*

- The government should subsidize the fish feed as it does with the other agricultural items.
- Farmers should be encouraged to intensify on integrated systems so they can be able to recycle resources on their farms, like manure.
- Feed operators should also sell feed in small quantity to allow everyone to afford.

*Lack of aquaculture equipment at e.g chest warders, seine nets and other equipment*

*Solutions provided:*

An opportunity for feed operators to stock aquaculture equipment in addition to feed

### **Socio-Cultural**

*Underrating of female hatchery operators:* There are people who usually underrate female hatchery operators and that is demotivating to the female hatchery operators.

*Solutions provided:*

- Awareness creation that female HOs can also produce good fingerlings
- Need to have more female HOs (50-50) to help change people's perception

### **Technological**

*Lack of quality fingerlings in the market:* Most existing operators on the market produce low quality fingerlings. This practice discourages smallholder fish farmers from buying fingerlings which impact businesses of hatchery operators in the project.

*Lack of knowledge on fish disease screening :* Participants raised their lack of knowledge in fish disease screening as a challenge. This new technology if shared with them will allow them to detect diseased fish in order for them to avoid selling diseased fish/fingerlings

*Lack of Knowledge on feed formulation:* Participants expressed their concern on lack of trainings on feed formulation. With this training, they will be able to supplement the commercial feed which is very expensive.

### **Environmental**

*Drying out of fish ponds:* This has affected many fish farmers in the Southern region of Malawi to the extent that some other fish farmers have had their fish ponds dried up with some farmers transferring their fish to some friends' farms to be bred till the rain comes.

*Solutions provided:*

- Promotion of afforestation along the river banks
- Campaign for no cultivation along the river banks
- Provision of loans to fish farmers to buy water pumps to be used for pumping water into their ponds
- Farmers should be encouraged to dig deeper ponds that are able to hold water for a longer time.

*Dumping of waste in the river which pollutes the water and affects fish growth.*

### **Legal**

*Theft of fish in the ponds.* There are reported cases of fish theft by some hatchery operators and other fish farmers as well, which affects their incomes.

*Solutions provided:*

- Ensure security by: watching over the ponds during the day and night, having dogs around.
- Use of planks with nails inside the ponds so that when thieves come to steal the fish, the planks do tear the nets they use.
- Fencing.
- Need to have strong by-laws that protects fish farmers from theft.
- The courts should give stiffer penalties to those caught stealing fish, this will serve as a lesson to the would-be offenders.
- Everyone selling fresh fish should have a letter from the village head man or from the District Fisheries Officer (DFO).



Hatchery operators discussing the challenges and risks



Ms. Charity (hatchery operator), presenting PESTEL discussions

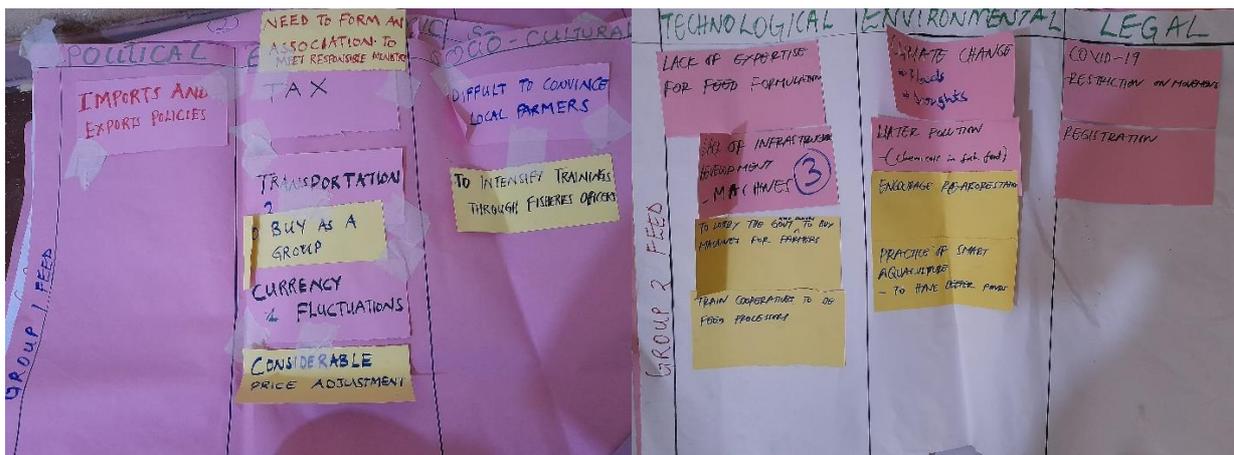
## Hatchery operators discussions

After the PESTEL discussions, all the hatchery operators met to discuss key issues and receive technical information on hatchery operations found to be a setback during monitoring visits. The following was covered:

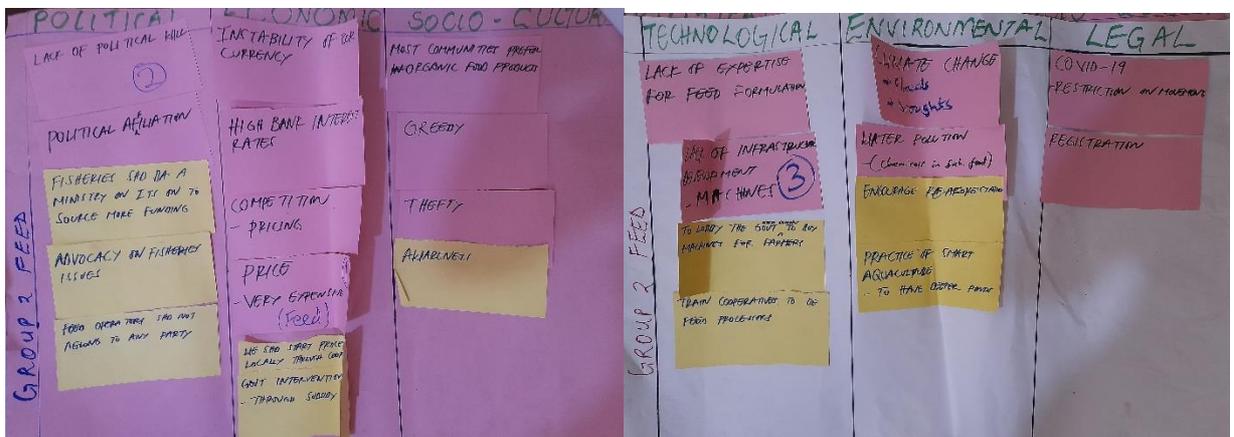
- 🐟 The hatchery operators were practically guided on how to count fingerlings using a tea strainer as this was identified as a huge challenge during the monitoring visits.
- 🐟 The hatchery operators were oriented on how to enter the collected data for fingerling production in the monitoring data sheets provided. The data sheets were translated in local language.
- 🐟 They were coached on how to enter data from their sales in the sales sheets provided during the TOT training last year, most of them did not know how to record figures.
- 🐟 They were guided on pairing of brooders as this was found a challenge during the monitoring visit. They were advised on the ratios of brooders they need to put in one hapa to realise optimum production of fingerlings.
- 🐟 They were advised on the need to enhance biosecurity practises to avoid fingerlings and fish losses. They were advised on how to prevent predators from entering their ponds and hapas by fencing the whole pond areas with local materials like bamboos.
- 🐟 The hatchery operators agreed to work in collaborations to access large markets. The issue of market access was a huge challenge identified by most hatchery operators.

## Feed Groups.

The three key challenges identified by the first feed group were: exchange rate fluctuations resulting in feed price fluctuations, high transportation cost of feed, relying on foreign feed manufacturers from Zambia. The second group identified high cost of feed, lack of political goodwill to invest in fisheries, and lack of infrastructure for local firms to manufacture quality feed in Malawi.



Challenges/risks and solutions/mitigation strategies discussed by feed group 1



Challenges/risks and solutions/mitigation strategies discussed by feed group 2.

### Political

**Imports and export policies:** policy changes in Zambia or Malawi may have an effect on the supply of feed as well as prices. For instance, if Zambia puts export bans or if either of the two countries increases duty.

**Lack of political goodwill:** There is no political goodwill to improve and invest in fisheries as compared to other agricultural products.

**Solutions provided:**

- Fisheries could have a Ministry of it's own to finance and prioritise its activities.
- Feed operators should not belong to any parties.
- Advocacy on fisheries issues.

## **Economic**

*Taxes:* Risk of increased domestic taxes with respect to VAT may have a huge impact on the prices which are already high. The government has waived taxes on agricultural inputs but not on feed which is a challenge.

*Solutions provided:*

- Need to meet responsible ministry as a group to air our views and lobby for tax waivers on feed.

*Transportation costs:* The trucks charge high transportation cost which reduces the profits, one may need to price the feed highly to cover the cost.

*Solutions provided:*

- Buying and transporting the feed as a group will greatly lower the transportation costs

*Exchange rate fluctuations:* The exchange rate fluctuations results in huge increases in feed prices which affects the ability of farmers to purchase feed.

*Solutions provided:*

- The increase in prices as a result of exchange rate fluctuations is very high, feed manufacturer may need to have considerable changes in prices

*High bank interest rates:* Most banks charge very high interest rates which are not conducive for SMEs.

*Competition in pricing:* Different feed operators are charging different feed prices which may result in unhealthy competition.

*Feed prices are too high:* Commercial feed prices are high as the feed has to come from Zambia.

*Solutions provided:*

- Work collaboratively to bring in feed in large volumes
- Government intervention through subsidy like other agricultural inputs.
- We can have local manufacturing of feed by cooperatives but there need for financial and technical support to do this.

## **Socio-cultural**

*Difficult to convince local farmers to buy feed:* Most smallscale farmers have the mindset that commercial feed is very expensive, beyond their financial capability which impacts on the sales.

*Solutions provided:*

- Need to collaborate and work closely with DFOs during trainings to change perception of farmers.
- Having demonstration plots for farmers to witness the profits that one can get using commercial feed.

*Communities prefer organic food:* Communities prefer organic food and may consider use of commercial feed as inorganic production.

*Solutions provided:*

- There is need for creating awareness on the ingredients of commercial feed

### **Technological**

*Lack of expertise on feed formulation:* High quality feed formulation locally will help feed operators buy feed cheaply and sell more.

*Lack of infrastructure for local feed production:* There is lack of infrastructure including equipment and machines for local firms to manufacture quality feed in Malawi. This greatly impact prices of feed in Malawi.

*Solutions provided:*

- The firms in Zambia could consider setting up plants in Malawi
- Government and NGOs could train and empower cooperatives to be feed producers

### **Environmental**

*Climate change:* Changes in climatic conditions have resulted to floods and droughts, affecting fish production intuitively affecting feed sales.

*Solutions provided:*

- Government and communities should encourage afforestation
- Practise of smart aquaculture e.g digging deeper ponds

*Water pollution:* There has been increased human activities in the water bodies resulting to chemical pollution. This has a risk on the feed business when farmers don't produce fish well.

*Feed spoilage due to high temperatures:* There is a risk that the feed will spoil due to high temperatures, considering the feed have a short life span.

### **Legal**

*Company registration:* Uncertainties on legal requirements for registering companies, and the associated costs.

*Covid-19 restriction on movement:* Restricted movements may affect their businesses and supply of feed.

## Feed operators discussions

After the PESTEL discussions, all the feed operators met to discuss they key issues affecting them, and make common resolutions.

During the discussions, the following was highlighted:

- To work together to purchase feed from manufacturers in Zambia; the distributors in Malawi are also competitors.
- Two representatives were proposed as coordinators: One male, one female. The coordinators will work with the operators and suppliers to ensure orders are efficiently made.
- In order to meet the volumes required, they will include other fish feed sellers who are not part of the project to purchase feed in bulk
- To work together to ensure that the feed does not expire through selling to each other in a reasonable price when one has finished their feed and another has stock.
- To have a whatsapp group in which they can freely communicate.
- The project team to link them to manufacturers in Zambia and help them on how they can import.
- Feed operators can have demonstration ponds to showcase fish growth using commercial feed. Currently, Worldfish hosts demonstration ponds under KULIMA project which feed operators can also link with.
- The need to work collaboratively to avoid feed expiry which will be a huge loss. Checking the expiry date when feed is delivered was empahsised.



Ms. Grace (feed operator), participating in the feed group discussion



Ms. Dorothy (feed operator) during the feed group presentation

## 6. Plenary discussions and feedback.

Representatives from the four groups presented their discussions of the challenges/risks and the solutions/mitigation strategies. After the plenary presentations, Ms. Chijere (Mwanza DFO) facilitated the plenary discussions. The following were the highlights of the discussions.

1. The possibility of feed subsidy as suggested by the operators was raised by one of the feed operators. Since the government subsidizes fertilizers and other agricultural materials, can they do the same for feed?

Ms. Chijere responded that it may not be easy to have the fish feed subsidized at the moment, it is important for people to run their business with the current market, and if managed well, they will likely get more profits by using commercial feed.

2. There was a feedback on the likelihood of having a plant for feed production in Malawi as a long term solution, as this will greatly reduce the feed prices.

Dr. Kanyumba responded that Mr. Junje in Lilongwe is planting a feed making machine and he also supplies quality fingerlings. These could offer avenues for local production.

3. Mr. Great Munthali (Zomba DFO) was curious why the formulas of fish feed that manufacturers in Zambia use cannot be shared to local investors and farmers in Malawi for them to try.

Dr. Mwema responded that the formulas are for commercial purposes and the company cannot share as they invest in developing them. Dr. Lundeba similarly added that these companies are into business and it's difficult for them to share their formulas.

4. Dr. Mwema probed the feed operators if they can stock the equipment and aquaculture materials as hatchery operators are facing challenges accessing them.

The feed operators mentioned that they are willing to stock them though they expressed uncertainty on the demand. Dr. Mwema advised that as businesses, they can take it as an opportunity and test the market with a few since most of the equipments are not perishable. They can start targeting the hatchery operators, as they reach out to other farmers, the DFOs could also help in identifying potential markets for both feed and equipment.

5. Mr. Great Munthali mentioned that there is a challenge on feed prices, how can the feed operators and even the hatchery operators work around the issue of feed prices that is too high.

A feed operator responded that they have discussed on ways they can collaborate and buy feed directly from Zambia to enjoy lower prices. Ms. Chijere also added that by collaborating they can lower on the cost of transportation.

6. Competition in pricing was highlighted as a challenge that may need to be addressed across the different operators. An operator suggested on having fixed prices for all the the feed operators.

Dr. Mwema advised that one needs to consider the transport cost from the supplier, as operators come from different districts; and also add some margin for profit to be able to reinvest back into the business. If they sell very low they will not manage to order feed supplies.

7. One of the solutions provided by hatchery operators for drying ponds was digging atleast 3m deep pond.

Dr. Lundeba in a discussion shared that such deep ponds keep a lot of water and face low risk of drying up, however management of the pond may become difficult for the very smallscale farmers. They may want to assess their resources in terms of labour, feed and management.

8. Challenges on accessing markets for fingerlings was a great concern to hatchery operators. To address challenges of fingerlings' markets, the groups emphasized on collaboration among hatchery operators.

One hatchery operator mentioned that if one finds a market that he can't manage to meet the demand, he/she can collaborate with others to meet the supply volumes required.

Ms. Chijere added that most hatchery operators with fewer fingerlings are the ones who face high risks of not selling their fingerlings, hence there is a need for the hatchery operators to start producing more and searching for larger markets for fingerlings.

9. To minimise the issue of fingerlings recycling, one hatchery operator mentioned the need for training on sex reversed fingerlings. Once farmers buy the sex-reversed fingerlings, they won't reproduce in the ponds and they will come back to buy more. However, they need training on sex-reversal

Dr Lundeba responded that the team will be piloting production of sex reversed fingerlings with selected hatchery operators. The few selected hatchery operators will use the sex reversal feed that will be provided by the project. She mentioned production of sex reversal fingerlings requires determination, hardwork and keenness to ensure high quality seed. The fish will need to be fed more regularly for upto 25 days, and the need for close monitoring.

10. One hatchery operator mentioned that most fish farmers are small scale, the need to be assisted with soft loans.

Ms. Chijere advised farmers to not think of getting loans always, better to start small then grow the business. She also mentioned opportunities for village banking which is cheaper.

Dr. Mwema mentioned that banks have different products and it is good to explore the interest rates and how beneficial the loan will be vis a vis the interest rates. There is need to do calculations if they can manage to pay back and still make a profit. This could be a point of discussion on subsequent platform where financial institutions will be invited.

Mr Bokosi (Hatchery operator-Mulanje) speaking on behalf of all the operators thanked WorldFish for helping them with broodstock, starter pack fish feed, and trainings.

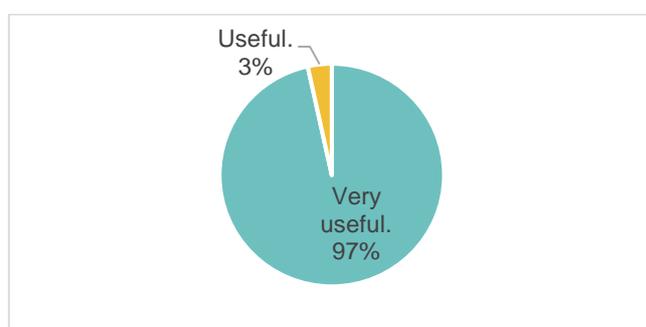


Ms. Grace (Mwanza DFO) Facilitating the plenary discussions among feed and hatchery operators.

## 7. Evaluation questions and workshop closure

At the end of the workshop, participants were asked to respond to some evaluation questions. A total of 29 participants filled in the evaluation forms: 3 DFOs, 11 feed operators, 14 hatchery operators, 1 both feed and hatchery operator.

The participants were asked their perception about the platform. All the participants found the platform to be useful; 97% ranked it as very useful.



The following were proposed as future issues for subsequent innovation platform:

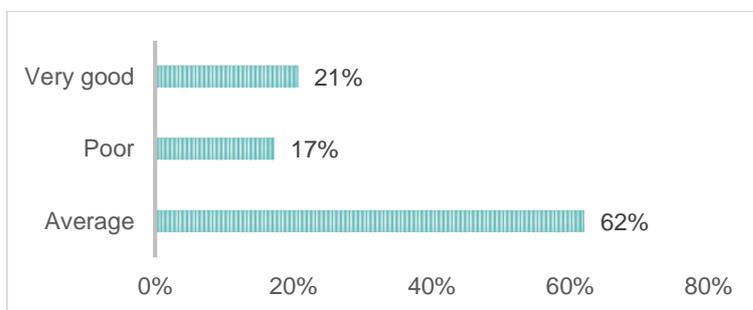
- 🐟 Sex reversal procedure
- 🐟 Marketing strategy and available markets
- 🐟 Education and exchange visits
- 🐟 Feed formulation
- 🐟 pricing strategies
- 🐟 Business and business mindset
- 🐟 Group dynamics
- 🐟 Credit and financing
- 🐟 Manure, fertilisations, and feeding regimes
- 🐟 Record keeping and financial management
- 🐟 Fish processing

The following were identified as key stakeholders to be invited in the next platform:

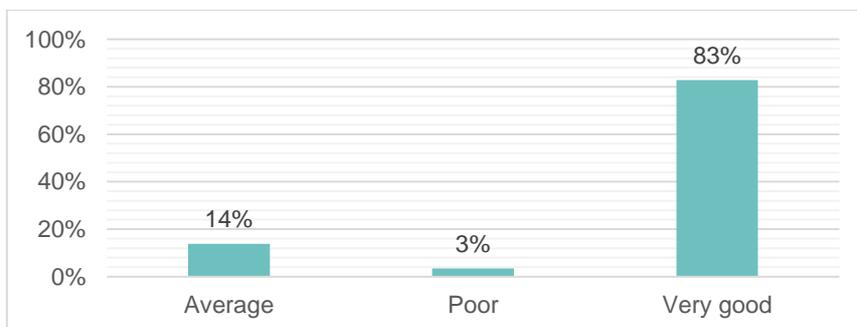
- 🐟 Police
- 🐟 Representatives from the Ministry of Agriculture
- 🐟 Chiefs and spouses

- District Commissioner (DC) & Director of Planning and Development
- Fish farmers
- Other value chain actors in feed, also from Zambia
- Financial institutions
- Cooperative leadership

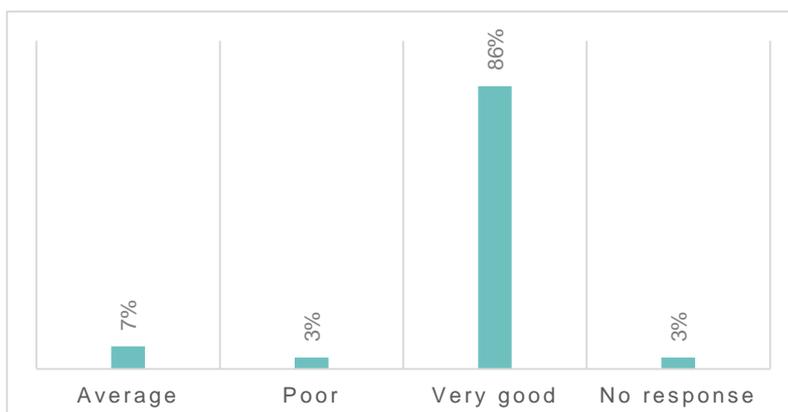
On logistic support, majority ranked it as average (62%). Most of the participants would like to have their allowances ready in cash, once they begin the meeting, to offset their living expenses. However, by WorldFish policy, payments are made electronically once attendance is confirmed.



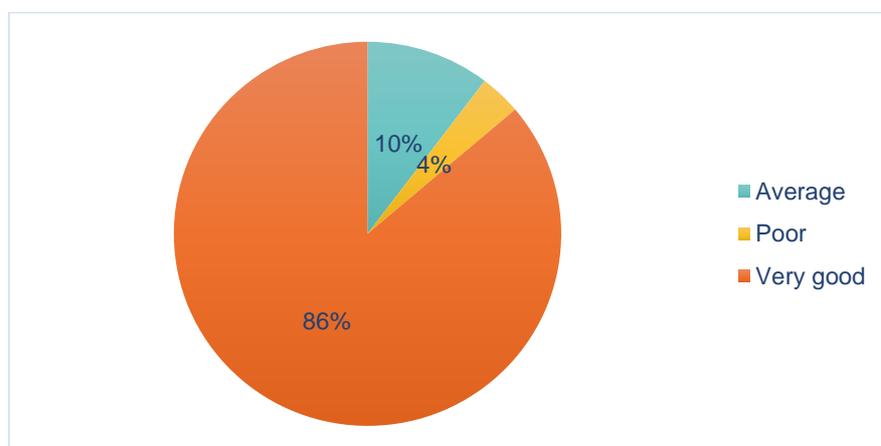
The participants were asked to rank the facilitation support provided, the majority (83%) ranked the support to be very good.



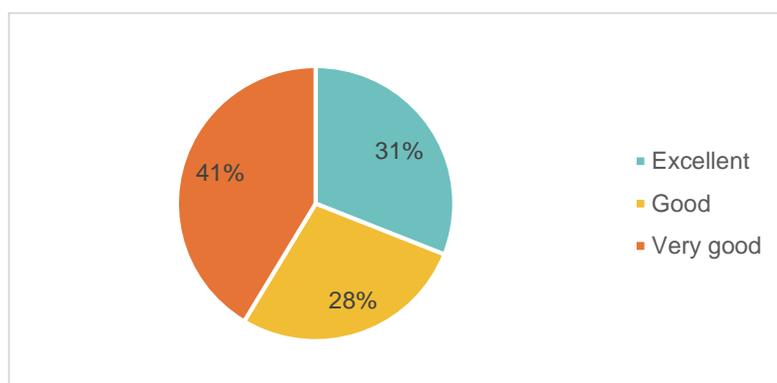
Asked about the facilitators' attitudes, 86% ranked the attitudes to be very good.



On adherence to covid-19 regulations, majority (86%) ranked it as very good.



The overall score of the platform was ranked by 41% as excellent, and 31% as very good. A 6-point Likert scale was used: excellent, very good, good, average, poor, very poor



The participants recommended the following:

- ✎ Better venue should be used, it was hot and the room provided was not big enough. Participants preferred sessions outside.
- ✎ Allowance should be provided in time. On the day of arrival in cash
- ✎ Duration of the platform should increase

Speaking in Chichewa, Dr. Kanyumba thanked all the participants for their time. He apologized to the participants for the delay in payments, and assured them they will receive the payments in their bank accounts by end of the day, latest the following day. He thanked them for coming to all the trainings when invited and should continue showing this commitment. He reiterated WorldFish commitment to working with all the stakeholders.

## 8. ANNEXES

### Annex 1: participants list

No.	Name	Type	Sex	Location
1	James Masonga	feed operator	Male	Mwanza
2	Queen Walota	feed operator	Female	Mwanza
3	Noel Masangano	feed operator	Male	Blantyre
4	Jones Njema	feed operator	Male	Mulanje
5	Synodeni Lipapata	feed operator	Male	Mulanje
6	Jammy Ganiza	feed operator	Male	Phalombe
7	Dorothy Twaibu	feed operator	Female	Zomba
8	Francis Chataika	feed operator	Male	Blantyre
9	Maggie Dyson	feed operator	Female	Mulanje
10	Mathias Synod	feed operator	Male	Phalombe
11	Miliward Hanyakuwa	feed operator	Male	Thyolo
12	Grace Sakala	feed operator	Female	Zomba
13	Charles Sports	Hatchery operator	Male	Phalombe
14	Falesi Machipisa	Hatchery operator	Female	Phalombe
15	Rajab Namonde	Hatchery operator	Female	Zomba
16	Down Chipembere	Hatchery operator	Male	Mulanje
17	Hawa Gama	Hatchery operator	Female	Zomba
18	Fibie Bweza	Hatchery operator	Female	Mulanje
19	Charity Banda	Hatchery operator	Female	Mulanje
20	John Bokosi	Hatchery operator	Male	Mulanje
21	Friday Nikoloma	Hatchery operator	Male	Thyolo
22	John Ntambo	Hatchery operator	Male	Thyolo
23	Lyton Galimoto	Hatchery operator	Male	Mwanza
24	Henry Kuchonde	Hatchery operator	Male	Blantyre
25	Lampiao Junior	Hatchery operator	Male	Blantyre
26	Edna Maganga	Hatchery operator	Female	Blantyre
27	Dr. Luciou Kanyumba	WorldFish	Male	Lilongwe

28	Irima Gondwe	DFO	Female	Blantyre
29	Grace Chijere	DFO	Female	Mwanza
30	Clesensio M. Likongwe	DFO	Male	Mulanje
31	Chrissie Banda	DFO	Female	Thyolo
32	Great Munthali	DFO	Male	Zomba
33	Chimwemwe Tembo	DFO	Male	Phalombe
34	Alinafe Maluwa	WorldFish	Male	Malawi
35	Dorothy Chisusu	WorldFish	Female	Malawi
36	Dr. Catherine Mwema	WorldFish	Female	Zambia
37	Dr. Mary Lundeba	WorldFish	Female	Zambia

## Annex 2: Innovation platform Agenda

**Piloting inclusive business and entrepreneurial models for smallholder fish farmers and poor value chain actors in Zambia and Malawi (2019-2022)**

Time	Activity	Facilitator
13.00 – 14.00	Joining and Registration	Alinafe/Dorothy
14.00 – 14.15	Introductions	
14.15 – 14.30	Welcoming remarks	Dr. Kanyumba
14.30 – 14.40	Project activities in Malawi	Alinafe Maluwa
14.40 – 15.00	Innovation platform and The PESTEL model and the assignment on identifying risks and challenges using PESTEL	Dr. Catherine Mwema
15.00 – 15.15	Break out room (brief on hatchery and feed operator models)	Alinafe and Dr. Lundeba (Seed groups)
15.15 – 16.15	Four groups each identifying the risks and challenges	Dorothy and Dr. Mwema (Feed groups)
16.15 -16.30	Selection of three key challenges and closure	DFOs to facilitate the groups
16.30 -17.30	Team re-organizes the discussions for tomorrow	Each group appoints presenters.
<b>Monday</b>		

<b>8.30 -8.45</b>	Recap of yesterday session	DFO
<b>8.45 – 9.45</b>	The groups identify solutions to the challenges	
<b>9.45 – 10.15.</b>	Plenary presentation	Feed and hatchery operators
<b>10.15 – 11.00</b>	Plenary discussion of the key challenges and way forward	DFO to facilitate
<b>11.00 – 12.00</b>	AoB and closing remarks	Dr. Kanyumba

### **About WorldFish**

WorldFish is an international, not-for-profit research organization that works to reduce hunger and poverty by improving fisheries and aquaculture. It collaborates with numerous international, regional and national partners to deliver transformational impacts to millions of people who depend on fish for food, nutrition and income in the developing world. Headquartered in Penang, Malaysia and with regional offices across Africa, Asia and the Pacific, WorldFish is a member of CGIAR, the world's largest global partnership on agriculture research and innovation for a food secure future.

For more information, please visit [www.worldfishcenter.org](http://www.worldfishcenter.org)