



15 October, 2020

# Stakeholder workshop report

Piloting inclusive business and entrepreneurial models for smallholder farmers and poor value chain actors in Zambia

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Funded by

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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.

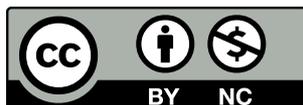
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## List of acronyms

IBEMs	Inclusive business and entrepreneurial models
ZNFU	Zambia National Farmers Union

# 1. 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. This project is intended to pilot and expand the use of inclusive business models as a mechanism for the FISH CRP to improve access by smallholder fish farmers to productivity-enhancing quality fish seed, fish feed, and innovative training delivering improved incomes, women and youth involvement in aquaculture, and importantly, for improved fish consumption for healthy and nutritious diets at scale. Working with 70 IBEMS in Zambia and Malawi, the project aims to reach close to 3000 farmers with inputs, services and training.

The project has the following outputs:

- 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 the 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 the 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 project will be implemented in the Northern Province in Zambia in the following districts: Mbala, Kasama, Luwingu, Mporokoso districts.

## 2. Stakeholder meeting objectives

On 15 October 2020, the project hosted an online stakeholder meeting to validate the fish seed and feed models as well as to discuss and about the establishing an aquaculture platform in Zambia.

Implemented online over three hours the meeting was split into three sessions as follows:

1. Introducing the project
2. Presentation and discussion of fish seed and feed business models
3. Introducing the idea of the aquaculture platform in Zambia

Presentations from WorldFish covered information about the project, the seed and feed models, and the innovation platform. While the presentation about the project was discussed in a plenary session, the proposed feed models and the proposed innovation platform presentations were discussed in breakout sessions and results of group discussions presented in plenary. The workshop integrated an interactive chat communication platform where participants could raise questions that they needed to be addressed in the plenary session.

Participants in the workshop included men and women smallholder fish farmers, government staff from relevant ministries, District Extension Officers from the Department of Fisheries, Private Sector and both local and international NGOs. (See Annex 1 for list of participants)

### Expected meeting outcomes

1. Stakeholders understanding the objectives and purpose of the project
2. Updated fish seed and feed business models
3. The initial outline of areas the innovation platform can focus on
4. Identification of synergies with other projects and initiatives

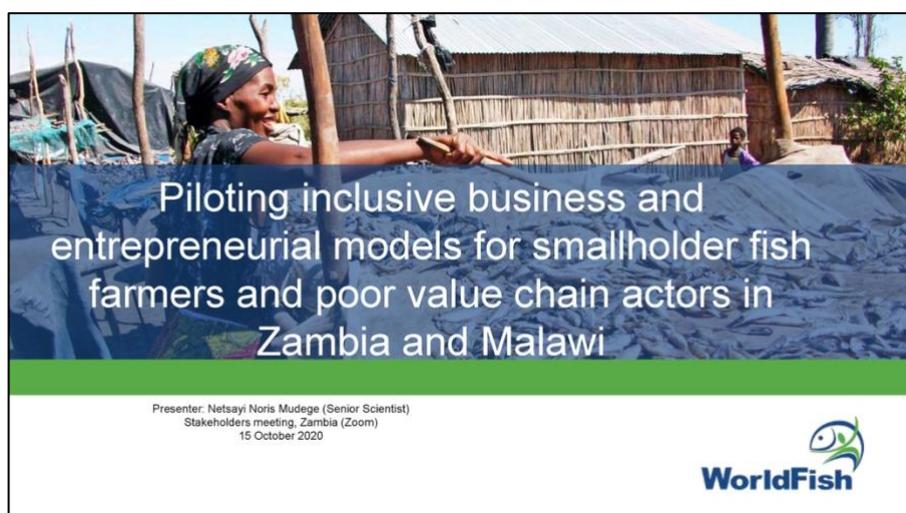
The meeting report is divided into three sections aligning with the three sessions of the workshop (see Annex 2 Workshop agenda).

### 3. Session 1: Welcome Remarks and Introducing the project

The workshop officially started at 9.30 a.m with welcoming remarks from Dr Siamudaala. He applauded the critical role played by each stakeholder towards the development of aquaculture in Zambia and the realization of WorldFish goals. He called upon all the stakeholders to actively engage in the workshop in offering their thoughts and opinions towards improving the developed business models. He concluded that every stakeholder is important towards contributing to the success of this initiative, emphasizing the need for collaboration and working together. After the welcome remarks, participants were randomly assigned to breakout rooms to introduce themselves. Each group had six members. Each of the members of the breakout rooms introduced their names. They talked about what they do and what they hoped to understand from the meeting.

#### Presentation session 1: About the project

Netsayi Noris Mudege (Senior Scientist) made a presentation about the project covering the following issues: 1) the goal of the project 2) Project implementation modalities including collaborations with the government, private sector and farmers, 3) solutions and technologies being implemented by the project 4) innovation platform.



See the presentation [here](#).

### **Question and answer session**

Participants wanted to know what criteria had been used to select IBEMS. Dr Mudege responded that the criteria would be presented in the respective feed and seed models presentations since the selection criteria for the two are different. Another concern was raised on the lack of focus on the value chain and marketing aspects of smallholder aquaculture.

*I think as a project, we shouldn't fall in the trap of production before securing markets for the produce. We might have a deficit today and commit resources to production with looking at the market, but once we fill the gap, it becomes a problem to offload the excess produce. So we should avoid the routine problems that have dogged the crops sector. Let's always start with the market and end with it as well (Mr Witika)*

The issue of avoiding post-harvest losses due to increased production since farmers do not have access to a cold chain was also mentioned. Some participants responded that currently, marketing was not a problem since there is a big gap in supply and demand, leading to the huge imports of Tilapia from China. Other fish buyers in Northern and Luapula mentioned that they are not getting enough supply of fish.

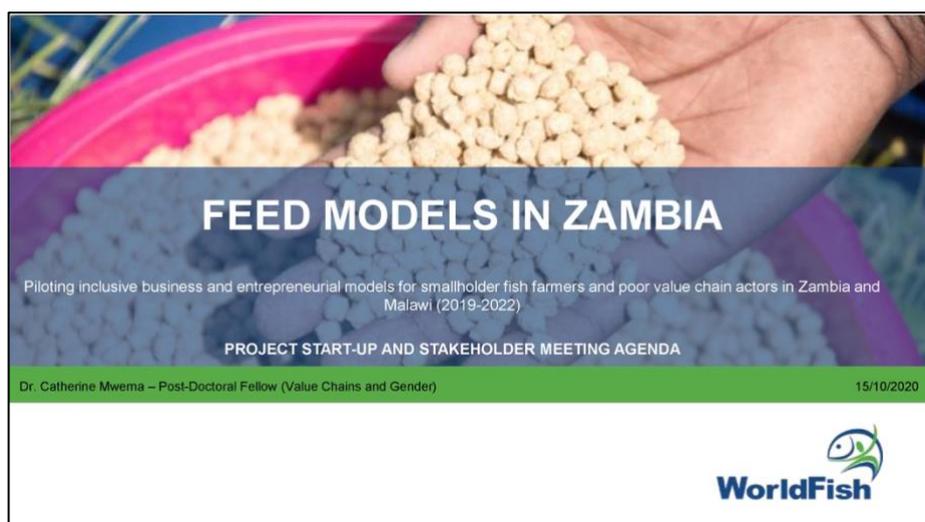
Dr Mudege responded that while the project is not focusing on grow out fish markets; it is linked to a Norad funded project implemented by WorldFish and its partners in Northern and Luapula provinces. The project focuses on market development and linking fish farmers to lucrative fish markets. Participants also wanted the role of the Department of Fisheries extension officers clarified. Dr Mudege explained that the project is collaborating closely with DoF officers concerning to farmer training. However, implementation had stalled due to COVID19 related delays, but activities are picking up again, which will also mean greater involvement if DoF. Some participants appreciated the issue of IBEMS training other farmers and stated that this needed to be strengthened if the project was to succeed.

## 4. Session 2: IBEM Models

This session was split into three parts. First Dr Mwema and Dr Lundeba presented the feed and seed models, respectively. After the presentations, participants were split into six groups depending on their role in the project. The groups were as follows: two groups of farmers and extension, two groups of government workers, two groups of big private sector companies and SMEs. Of the two groups per category, 1 group discussed the feed models and the other discussed and reflected on the seed model. The last part of this session involved a plenary session where group representatives presented the results from the group discussions in the plenary session (See Annex 3 for questions for breakout sessions)

### Presentation 1: Feed models

Dr Catherine Mwema presented on the feed models. The presentation covered the rationale and challenges in the use of commercial feeds. A review of feed models with applicability to Zambia was presented. The proposed feed models and projected profitability and sustainability approaches were presented.



See the presentation [here](#).

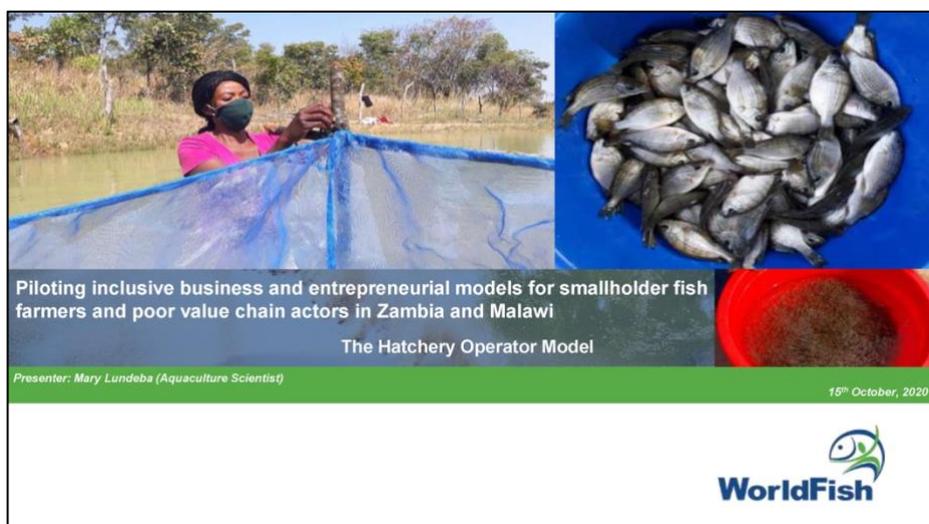
#### *Interactive reflections and clarifications during the feed presentation*

Dr Mudege managed the interactive chat during the feed presentation. Several issues were raised regarding the models. One participant wanted to know whether the feed models what the project is doing to ensure availability of raw materials since crops which are used as raw materials are also in demand from other industries and also are essential for household food security. What incentives exist for farmers to use these crops for fish feeds as opposed to other uses? Dr Mudege indicated that the project was mostly promoting commercial feeds as the gold standard since commercial feeds are superior to other feeds in terms of Feed Conversion Ratio. One participant stated, 'I had a notion that you are also promoting small scale feed making for selling to farmers that could reduce the cost of the feed. Without this, I believe the feed is still likely to be costly to the smallholder fish farmer even if the feed is brought closer to the farmer'. Dr Mudege responded that fish had done calculations and found that in terms of productivity, commercial feeds are much cheaper than home-made or other feeds on

account of their high conversion ratio. However, in the ToT, BEMS will also be trained to train others to make their feed at the farm level. Another participant reflected that bringing feed closer to producers will reduce transport costs, but transport costs are not the only thing that makes feed expensive. This participant wanted to know what steps the project is proposing to take care of the high cost of raw materials.? Dr Mudege reflected that this is an issue that can be discussed and tackled by the innovation platform when it is set up and functional.

## Presentation 2: Seed Models

Dr Mary Lundeba presented on the seed/hatchery operator model. The presentation covered the need for the hatchery operator model, which is to reduce recycled and poor-quality fingerlings; the operational working of the model and sustainability approaches, recruitment criteria for IBEMS and an analysis of how the IBEMS would reach smallholder farmers with training and fingerlings.



See the presentation [here](#).

### Reflections and clarifications in zoom chat before the breakout session:

Participants mentioned the need to integrated quality assurance of the fish seed in the model. It was noted that the Zambia Bureau of Standards was already certifying fingerlings. Other participants stated that we need to know what certification criteria ZABS uses so that we know whether this is sufficient or need to be improved.

### Break out session: Discussion of feed and seed models

Six breakout rooms were initiated, three on the feed models and the other three discussing the seed model. Below we present the results of the discussions around the seed model then results of the discussions around the feed models.

## Discussion of seed models and plenary feedback

### ***What are the key issues affecting smallholder fish farmers in the fish sector in Zambia concerning access to seed? What about in Northern and Luapula provinces?***

Farmers, private sector and government actors raised the following issues key issues affecting smallholder farmers in Zambia concerning access to feed.

**Farmers** raised the following issues as areas of concern:

- Lack of quality fingerlings
- Recycling of fingerlings which may result in stunted fish and bring about inbreeding issues
- Accessibility and availability of fingerlings in rural areas
- Lack of Government Fish farms in some districts like Kawambwa

**Private sector** actors were focused more on the value chain approach. There was concern that raised about value chain development as follows:

- There are many activities around fish farming in Northern Province. These activities will increase production. If markets and value addition are not addressed in the beginning, this can lead the sector to collapse.
- The private sector suggested the following value chain development measures:
  - Setting up aggregation centers such as cold rooms;
  - Training farmers how to process fish using various technologies for smoking, canning, salting and filleting
  - Creating linkages to the fish skin industry.
  -

**Government** actors raised several issues as affecting smallholder fish farmers as follows:

- Lack of information - on a) where they can source seed, b) why they need to access new seed, as most farmers are fond of recycling seed from their farms or other farmers.
- Some farmers are unable to access seed due to lack of transport, especially for those that are located further from the seed source.
- Lack of funds at DoF Stations- DoF stations are one of the most common places that farmers get seed from, but if they run out of funds to support their seed production activities, then there will be no seed for the farmers.
- There is a challenge of seed supply not meeting demand in both Northern and Luapula. Lack of consistency in access to fingerlings discourages farmers. There are many dormant ponds because of this. Farmers end up getting fingerlings from natural water bodies which may not be the fish which they want.
- Lack of sex-reversed fingerlings

### ***Are the proposed seed models appropriate for the smallholder sector in the project area and Zambia at large? Why?***

All actors stated that the proposed seed models were appropriate for smallholder farmers. They gave the following reasons:

- **Farmers** stated that the proposed seed models were appropriate because they will improve the availability and accessibility of fingerlings by smallholder farmers. They also mentioned the following reasons why the seed model was appropriate:
  - There will be no mixing of species; for example, in the farmer to farmer seed supply species of fish are mixed and sometimes unknown.
  - The quality of fingerlings will be improved. For example, if you get fingerlings from other farmers, the size of fish may indicate that fish are fingerlings and yet they are stunted adult fish. Once a farmer stocks those fish as fingerlings, they cannot grow any bigger.
  - In this model, the collaboration with DoF and also training of farmers, hatchery operators and DoF make the model appropriate because all the parties are involved.
  - Constant upgrade of knowledge and skill from WorldFish will ensure sustainability.
  
- **The private sector** was convinced that the feed models were good; however, they wanted to see how they would be implemented. If activities are not implemented as planned/designed, the models may fail even if they are good. They also suggested the following:
  - Digitizing IBEMS so that those linked to an IBEM can have a membership card which can allow them access to inputs and services at a discounted rate
  - Adding an insurance component so that farmers do not lose everything in the event of theft or a natural disaster
  - Consider smaller packages of feed for smallholders.
  - Reduce reliance on subsidies. Farmers need to see the economic benefit rather than incentives to reduce dependency on projects.
  
- **Government** actors thought that the seed models were appropriate but suggested that there should be even distribution of the hatchery operators to reduce the distance travelled by farmers to access the seed. They also said the following:
  - There is a need to provide information about who and where these hatchery operators will be found.
  - The model will bring seed closer to farmers reducing transport costs related to seed.
  - The proposed seed models will break the habit of farmers recycling seed due to unavailability of seed.
  - The capacity of Hatchery Operators will be boosted, and they will also support other farmers bringing up overall capacity in the smallholder aquaculture sector.
  - The proposed model will also provide an income-generating opportunity for those farmers that will be involved.

### ***Will the proposed seed models result in increased availability of and access to quality seed? What needs to be improved?***

All actors stated that the proposed models could result in increased availability and accessibility to quality seed. However, they also suggested some improvements:

- **Farmers:** Farmers stated that the models would result in seed availability. However, they suggested the following improvements:
  - Develop an approach for local transportation of fingerlings
  - Visits from trainers and DoF should be continuous.
  - Training should be given to both hatchery operators and cluster farmers.
  - Cluster farmers or farmers, in general, should be encouraged to get rid of their old stock of fish and buy new stock from hatchery operators.
  - The hatchery operators should be encouraged to own the model so that it is sustainable.
  
- **Private sector:** Private actors thought the model would work, but they had technical suggestions. For example, actors wanted to know what sort of fingerlings is the project targeting? From experience, with hapas based systems, the production of sex-reversed fingerlings has a low success.
  - They also suggested that the project could consider indoor hatcheries.
  
- **Government:** Government actors suggested that the models would increase the availability of and access to seed if they are done more inclusively especially where the Department of Fisheries (DoF) staff are involved from the start of the activity. DoF may act as a medium between the project or WorldFish and the farmers. DoF has a good relationship with many smallholder farmers in their respective areas, and they would play a critical role in involving them. DoF may also help ensure that these models are sustained beyond the project.
  
- Government actors also had other technical suggestion.
  - There is a need to have a good seed certification system-quality of seed that will come from hatchery operators must be checked.
  - IBEMS must be able to define what high-quality seed is
  - Government players wanted to know how broodstock from the wild will be conditioned to adapt to the culture environment for it to perform well. They suggested that if broodstock from the wild is used, it should be allowed to breed on the station, and then the offspring will be recruited as brooders because they would have adapted to the culture environment.

### ***How can the proposed models be improved to benefit women and young people both as farmers and as IBEMS?***

Farmers and private sector players had the following suggestions:

#### **Farmers**

- Sensitization by inviting women and youth during fish harvest
- Make fish farming attractive to this particular group.
- Deliberately select women and youth headed households to participate as IBEMS.
- Break some cultural norms; they are jealous husbands who do not want their wives to leave homes alone; involve them as couples.

- Exposure visits for women.

#### **Private sector:**

- Women should be engaged not only in fish farming but in accessing the benefits. Women can easily move in aquaculture if they see the economic benefit because they are always looking for food and income for their households. For example, now women are engaged in caterpillar harvesting because it is profitable to them.
- Make aquaculture as a home-based activity integrating all family members so that there is overall household participation, including women. Gender aspects could be included in IBEMS training.

#### **Discussion of feed models and plenary feedback**

All actors stated that the feed models could work and were relevant for the smallholder context in Zambia. More results on the feed model discussions are presented below:

#### ***What are the key issues affecting smallholder fish farmers in the fish sector in Zambia concerning access to feed? What about in Northern and Luapula provinces?***

Farmers and private sector players raised similar issues as affecting smallholder farmers in the fish sector in Zambia. These challenges included the following:

- Lack of availability of quality feed to support the use of sex-reversed fingerlings. In Chipoli district, for example, the government fish farm together with the district council office is tirelessly working towards ensuring the availability of sex-reversed fingerlings in the district through increased production, and this needs to go hand in hand with quality feed which is not available.
- Bigger bags of feed cost more than what farmers can easily afford
- There are many middlemen in the feed supply chain which introduces inefficiencies
- High transport costs make feed expensive
- Low demand for feed from farmers which leads to the expiry of feeds in agrodealer shops
- High cost of ingredients in producing feeds, resulting in high feed prices

#### **Government**

- Private companies are not seeing the benefit of supplying feed to smallholder farmers. In Kawambwa, we tried to engage the private sector on that, but we were not successful.
  - For example, the feed expired on the shelves because of a lack of demand.
  - Farmers may not demand commercial feeds because they view it as expensive and may not have enough knowledge and information to appreciate that commercial feeds are more efficient than local feeds.
- Sometimes feed sellers and distributors bring the wrong feed. A farmer may want a starter feed, but only finisher feeds are available in the shops.

#### ***Are the proposed feed models appropriate for the smallholder sector in the project area and Zambia at large? Why?***

All actors thought that the feed models were appropriate. While farmers suggested that they also needed to be taught how to produce own farm feeds, they agreed with the private sector players that feed model will provide an opportunity for business to agro-

dealers and other potential intermediaries in the various farming communities.

Government actors raised a few concerns as summarized below:

- Government players felt that the proposed models were good but cautioned that the 30% to be contributed by the farmer may be too high, especially with the current economic situation. They suggested considering in-kind contribution, especially where farmers cannot manage the whole 30% in cash. The contribution could be lowered to 20% or so, but farmers should contribute so they can have a sense of ownership.
- There should be well-defined requirements/conditions for farmers to access the co-funding
- Farmers should also be taught about feed formulation and not rely on commercial feeds alone.
- We need to consider reducing the bag sizes of fish feed so that smallholder farmers can afford.

***Will the proposed feed models result in increased availability of and access to commercial feed? What needs to be improved?***

While farmers felt that the model would bring seed much closer to farmers, government actors suggested that support services would make the business viable as follows:

- The model can increase availability and accessibility to commercial feeds if women and youth have access to financial services to be able to afford the seed.
- If women are encouraged to work in groups so that they can aggregate – being in groups gives them strength
- Integrating a savings component to the model will improve sustainability. There should be a proper sustainability plan. A model that has helped is the issue of savings groups which IBEMS could be encouraged to use. Particularly the village banking model could be promoted. That way, it is possible to sustain the activities of the project beyond the project's life span.

SMEs also raised a concern regarding the feed models. They noted that the large size of feed bags could make feeds not accessible to smallholder farmers who often prefer smaller packets. However, the challenge related to this was that millers might not accept an intermediary to repackage and sell their feed due to fear of distorting the quality of feeds. Cooperatives may have leeway to buy for members and repackage, but millers often do not allow SMEs and other agrodealers in the retail sector to do so. SMEs also stated that they needed business skills training to be able to manage the feed and make a profit.

***How can the proposed models be improved to benefit women and young people both as farmers and as IBEMS?***

All actors raised similar issues regarding how the feed models could be improved to benefit women and youth. The following suggestions were made:

- The selection criteria should not exclude women.
- Engage traditional leaders so that women organized in groups can access land for fish farming
- Enhance the monitoring system to ensure that strategies that have been put in place can track participation by women and youth
- There is a need for the project to keep track of the extent to which women are in control of decisions and decision making.

- Being in Groups can help women have access to land, but they need to be registered as a cooperative so that they can access more help from other avenues. These groups need continued training on leadership skills and entrepreneurship. When women are trained, they can hang on to what they have been trained.

## 5. Session 3: Innovation Platforms

This session was split into three parts. First Dr Mudege presented about the idea behind the proposed fish innovation platform for Zambia. After the presentations, participants were split into six groups depending on their role in the project. The group categories were as follows: two groups of farmers and extension, two groups of government workers and two groups of big private sector companies and SMEs. Each group discussed the following questions and reported back in the plenary session:

1. Do you think Zambia needs an innovation platform focusing on the fish value chain? Explain your answers
2. On what should the innovation platform focus?
  - a. What themes are important to you/others in your position?
3. How should smallholder farmers, private sector plays, government agencies be included in the platform (respond to this question depending on your breakout group. For example, if you are in a breakout group with farmers, respond for smallholder farmers)
4. How can the innovation platform ensure the participation of women and young people?

Dr Netsay Noris Mudege presented about the proposed idea of a fish innovation platform for Zambia. See the presentation [here](#). The presentation covered the following topics:

- What an innovation platform aims to achieve: that is to bring private, public actors and farmers together to determine efficient and sustainable strategies to reach smallholder farmers through the IBEMs and scale their investments.
- An analysis that innovation platform members can decide themes and topics that suit them and arrangements that are appropriate to solve common problems or to take advantage of opportunities.
- The benefits and constraints of an innovation platform.



She also emphasized that the success of an innovation platform depends on trust and willingness among stakeholders. Achieving outputs may take longer than the duration of the project; therefore, the need to have tangible outputs to sustain the members' interest and commitment to the innovation process.

### **Break out session and plenary discussion on the innovation platforms**

Six breakout rooms were initiated categorized according to actors. All groups discussed the same questions. All actors agreed that for smallholders to be represented in the platform, farmer representatives and District Extension Officers from DoF should be part of the platform. Also, the innovation platform could use media platforms like TV/Radio/Print/websites/ Facebook and other platforms that are accessible to farmers and young people.

On ensuring the participation of women and young people in the platform, they gave the following strategies:

- Developing deliberate strategies to empower women and youth
- Involving chiefs, headmen and women to help involve women and young people in development programs
- Using women lead farmers to encourage other women.
- Focusing on developing training methods that are easily accessible to women farmers. For example, using comical books that talk about fish farming – should be in colour and the local language. Need a deliberate way of developing pamphlets to capture the attention of the people so that they understand what we are talking about

Below we present additional results of group discussions which were slightly different depending on the actor category.

### ***Do you think Zambia needs an innovation platform focusing on the fish value chain? Explain your answers***

All groups were in agreement that Zambia needed a fish innovation platform. However, the reasons why this innovation platform was needed differed by category of the group as follows:

Farmers felt that we needed an innovation platform for the following reasons:

- To improve fish production
- To improve on inputs and also output markets.
- To discuss issues of equipment for aquaculture and also value addition issues.
- To discuss importation of aquaculture equipment such as hapas, scoop nets from China and elsewhere, to see if Zambia can start manufacturing these and involve women and youth in the production of these materials.

Government actors suggested the following reasons why they supported a fish innovation platform:

- To formalize activities around aquaculture and the value chain, so that information and knowledge is standardized to reduce misinformation spreading to farmers regarding issues like stocking rates, feeding rates, feed types etc
- Experts along the value chain require a platform that will organize them and ensure authenticated data/information is shared regularly.

- An innovation platform will help in sharing knowledge and skills, capacity building.
- It will improve the fisheries sector at a national level since it will focus on the entire value chain from fingerling production to marketing and trade.

Private sector actors mentioned the following reasons why a fish innovation platform was needed for Zambia.

- Innovation platforms are useful. They could be linked to Facebook and WhatsApp groups for farmers where farmers share information.
- The innovation platform could also design a quicker way to share information and provide market linkages across various players/actors.

Workshop participants also stated that they worried about the sustainability of the innovation platform since similar initiatives have not been successful in the past, since the innovation platform collapse after the project ends. One participant suggested that the innovation platform should be hosted by a local association such as ZNFU instead of WorldFish for it to survive after the project ends.

### ***On what should the innovation platform focus?***

Value chain development and extension services were cross-cutting themes across all actors of themes that the platform should address. However, there were also various other themes raised by the groups as follows:

Farmers mentioned the following themes as necessary for the innovation platform for focus on:

- Feed and seed production and distribution
- Improvement of the aquaculture value chain to improve fish production
- Importation of aquaculture equipment
- Extension services
- Business planning and financing/borrowing
- Value addition processing and marketing
- Better management practices in hatchery, feed and general management

Government actors mentioned that the innovation platform should have discussions about

- How to strengthen extension.
- Certification standards for fingerlings including a fingerlings quality monitoring system like the one they have for organic crops
- Marketing and value chain development, packaging and processing such as making fish cakes and filleting
- Improving the quality of fingerlings but also strengthening extension. If ponds are not well-managed smallholder fish farmers may accuse seed producer of selling bad fingerlings, yet it's a pond management problem.

The private sector actors were concerned about inclusion and suggested the following measures:

- a. Financial inclusion for scaling up production
- b. Digital media to address various issues. Utilize media which has a broader coverage such as SMS systems/apps that can be used and be given to lead IBEMs/farmers

### **Which actors should be members of the platform?**

All actors agreed that all stakeholders in the aquaculture subsector should be part of the innovation. These actors included farmers, feed producers, hatchery operators, government, fisheries officers, those engaged in processing and manufacturing of fish related products.

## **6. Evaluation questions and workshop closure**

Participants were asked which feed models they think will be most impactful in reaching smallholders, more than three quarters selected both decentralized retailers and aggregation by cooperatives. 9 out of 10 respondents felt that the presentations were useful. All the respondents would like to be part of the innovation platform.

### **1. Which Feed Model(s) do you think will be most impactful and reach most smallholders? (Multiple choice)**



### **2. How did you find the presentations?**



### **3. Would you like to be part of the innovation platform?**



As a closing remark, Dr Siamudaala thanked all the participants for their enthusiasm in the subject matter and the contributions made in refining the models. He reiterated WorldFish commitment to work with all the stakeholders in the value chain.

## **Observations**

- The participants were very enthusiastic and showed interest in the subject matter. They requested to have more time in the breakout rooms to discuss the models.
- The attendance was remarkable with over 80 % of those invited, confirming and participating in the workshop.

- Farmers were represented and actively participated in the session albeit through a shared laptop provided by the DoF.

## Annex 1. List of participants

No.	Name	Organization	Position	Sex	Region
1	Ramans Kayumu	DoF	Provincial Fisheries Officer	M	Kasama
2	Nawa Kabika/ Mr Gondwe	MFL-DoF	Misamfu Fish Farm	M	Kasama
3	John Banda	Environmental and Social Inclusion Specialist	NPCU	M	Lusaka
4	Libakeni Nabiwa (Dr.)	Musika	Manager-Aqua Markets	M	kasama
5	Robert Kanyembo	Novatek	Aquaculture Manager	M	Lusaka
6	Godfrey Sichalwe	Mpende Fisheries	Regional Manager	M	Kasama
7	Cosmas Chachi	SME-Triple Blessings	Director	M	Luwingu
8	Felix Mulenga	Kasakalabwe Cooperative	Chairperson	M	Kasama
9	Janet Katongo	Kasakalabwe Cooperative	Member	F	Kasama
10	Kathleen Katunansa (Dr.)	MFL	DFLCO	F	Mansa
11	Zemba Chilando	MFL	DFL Coordinator	F	Kasama
12	Kacha Mudenda	CEEC	Provincial Coordinator	M	Kasama
13	Mwate Nampemba	Peace Corps	Prov. Coordinator	F	Mansa
14	Richard Mulunda		TRALARD	M	
15	Kondwani Sakala	MFL	DFLCO	M	Luwingu
16	Rabson Witika	MFL	Fish Markets	M	Kasama
17	Lusebo Nalishuwa	MFL	DFLC	F	Mungwi

No.	Name	Organization	Position	Sex	Region
18	Ethel Mudenda	TRALARD	Prov. Coordinator	F	Kasama
19	Masiliso Phiri	DoF	Provincial Fisheries Officer	F	Mansa
20	Priscilla Singine	Aller Aqua	Sales Tech Rep	F	Kasama
21	Mr. Sikabalu Malawo	Skretting	Technical Sales Manager	M	Siavonga
22	Evans Mutale	SME-Eva Muta	Director	M	Mungwi
23	Wilbroad Musanshi	SME-Hope Ways	Director	M	Mansa
24	Ms Angela Mulenga	TIYA Social Business Enterprise	CEO	F	
25	Wiza Sindazi	SME-Wiza Enterprises (HO)	Director	M	Kawambwa
26	Mubemba Mubembe	Peace Corps	Prov. Coordinator	M	Kasama
27	Royd Mukonda	Mukasa Agrosolution	Director	M	Kabwe
28	Natasha Mhende	Musika	Manager (SMEs)	F	Kasama
29	Ndala Shanda	SME-Kasama Farmers Basket	Director	M	Kasama
30	Misozi Ngulube	Musika/WorldFish	Field staff	F	Kasama
31	Mulenga Sichilima	SME-Mule-Stus Agro Services	Director	M	Mansa
32	Julie chewe	TIYA Social Business Enterprise	Deputy CEO	F	
33	Samanta Mapfumo	GIZ	Fish for Food Security in Zambia Project GIZ Zambia	F	Lusaka
34	Francis Banda	intern	Kasakalabwe	M	Kasama
35	Precious Daka	DoF	District Officer	F	Mungwi

No.	Name	Organization	Position	Sex	Region
36	Stephen Simasiku	Fish Farmer (DMDO)	Manager	M	Luwingu
37	Chomba Chileshe	Fish Farmer (HO)	Director	M	Luwingu
38	Mfune Mwendalubi	DoF	District Officer	F	Mporokoso
39	Simon Chitundu		Farmer		
40	Africa Muzungaire	DoF	OIC-Govt. Fish Farm	M	Chipili
41	Thandiwe Foroma	Hope Ways	Production Manager	F	Mansa
42	Susan Chakwira	DoF	Field officer	F	Chipili
43	Miriam Kanyama	DoF	District Officer	F	Mpulungu
44	Charles Phiri	World Vision	Manager	M	Kasama
45	George Mwila	Farmer (HO)	Farmer	M	Mbala
46	Catherine Sakala	Provincial Projects Operations Officer	TRALARD	F	Muchinga
47	Gaphine Walubita	Environmental and Social Inclusion Officer	TRALARD	M	Northern
48	Janet Phiri	Environmental and Social Inclusion Officer	TRALARD	F	Luapula
49	Peter Chisanga	Environmental and Social Inclusion Officer)	TRALARD	M	Muchinga
50	Agness Bwalya		Farmer	F	
51	Luct Mwanza		Farmer	F	
52	Getrude Musonda		Farmer	F	
53	Laina Mvula Kapotwe;	Farmer (HO)	Farmer	F	
54	Petronella Mumpangwe;	Farmer (HO)	Farmer	F	
55	Chilinda Henry	Farmer (HO)	Farmer		

No.	Name	Organization	Position	Sex	Region
56	Musonda Mushili	MFL	District Officer	M	Luapula

## Annex 2. Workshop Agenda

Time	Program	Facilitator
9:30 – 9:40	Welcome remarks and Introductions	Victor Siamudalaa
9:40 – 9:55	Presentation of the project objectives, aims, geographical location	Netsayi N Mudege
9:55 – 10:05	Question and discussions	Keagan Kakwasha
10:05 – 10:20	Presentation of the Hatchery IBEMS (Zambia)	Mary Lundeba
10:20 – 10:35	Presentation of the feed models (Zambia)	Catherine Mwema
10:35 – 11:00	Group discussions on the models (breakout rooms (Small holder farmers, private sector players, extension)	Hanzunga Halumamba and Tabitha Muliro
11:00 – 11:10	Report back to the session	Ms Lizzy Muzungaire
11:10 – 11:25	Presentation on Innovation platform	Netsayi N Mudege
11:25 – 11:45	Innovation platform (breakout rooms (Small holder farmers, private sector players, extension)	Hanzunga Halumamba and Tabitha Muliro
11:45 – 11:55	Report back to the session	Keagan Kakwasha
11:55 – 12:00	Meeting evaluation end and next steps and closing remarks	Keagan Kakwasha

## Annex 3. Questions discussed during breakout sessions

### **Breakout session 1: Introduction (5 min breakout sessions for 6 people)**

- Please introduce your name, what you do and what you hope to understand from this meeting and what you want others to know about you that they don't already know.

### **Breakout session 2: Seed Model Questions**

1. What are the key issues that need to be addressed in the fish seed sector in Zambia in relation to access to seed for smallholder farmers?
2. Are the proposed seed models appropriate for the small holder sector in Zambia? Why?
3. Will the proposed seed models result in increased availability of and access to quality seed? What needs to be improved?
4. How can the proposed models be improved to benefit women and young people both as farmers and as IBEMS?

### **Breakout session 2: Feed Model Questions:**

1. What are the key issues that need to be addressed in the fish feed sector in Zambia in relation to access to feeds for smallholder farmers?
2. Are the proposed feed models appropriate for the smallholder sector in Zambia? Why?
3. Will the proposed feed models result in increased availability of and access to commercial feed? What needs to be improved?
4. How can the proposed models be improved to benefit women and young people both as farmers and as IBEMS?

### **Breakout session 3: Innovation platform question**

5. Do you think in Zambia we need an innovation platform focusing on the fish value chain? Explain your answers
6. What should the innovation platform focus on?
  - a. What themes are important to you/others in your position?
7. How should smallholder farmers, private sector players, government agencies be included in the platform (respond to this question depending on your breakout group. For example, if you are in a breakout group with farmers, respond for smallholder farmers)
8. How can the innovation platform ensure the participation of women and young people?

### **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)