

Fresh Fish Intervention Justification for the Pond Demonstration

Background

The fisheries sector—comprised of both cultured and wild capture fish—is one of the most important sectors in Nigeria, both from an economic and social standpoint. In 2009, the Federal Department of Fisheries contributed approximately US\$ 1 billion to the country's GDP. Further, in the Niger Delta, the sector is an important contributor to employment, livelihoods, and food security. Particularly for the sector's participants including pond farmers and fishermen, as well as pond fish producers, distributors, marketers, transporters, credit service providers, boat owners, boat builders and repairers, and net repairers.

In the fisheries sector, fish reaches the end consumer—households, informal eateries, formal institutions— in either a smoked or fresh state. In the domestic fresh fish channel supply is dominated by cultured fish which represents approximately 85% of total supply. The importance of cultured fish to the fisheries sector is further reflected in its size, value, and number of employed. The aquaculture sector is valued at N70 billion and contributes some N22 billion to the Niger Delta regional GDP. Importantly the aquaculture sector has seen strong growth trends, with production jumping from 16,619 tonnes in 1995 to 200,535 tonnes in 2010 representing more than an 1,100% increase in growth. In terms of employment, the aquaculture sector directly supports an estimated 12,000¹ pond fish farmers of which 3,000 (25%) are female.

Thus, MADE selected the aquaculture sector for intervention because it fulfilled our key selection criteria—growth potential, impact on the poor and women, and feasibility. The sector's growth potential is driven off the back of strong market demand. The sector's poverty reduction potential is rooted in the number of fish farmers in the Niger Delta and the sector's strong multiplier effect with additional labour and economic activity revolving around each pond (e.g. feed, fingerlings, services). Finally the sector's feasibility stems from technological advances which have increased the efficiency and profitability of actors in the sector and the supporting enabling environment at the national level (through the ATA) and the state level (in particular Rivers State).

However, to realise the opportunities presented by the sector for poor fish farmers in the Niger Delta, the following underlying strategic constraints must be addressed:

1. Poor production knowledge by farmers leading to large wastage of feed and poor water quality management —resulting in high production cost of catfish² farming.
2. Poor business management knowledge.
3. Low market penetration by hatcheries.
4. Low market penetration by some feed companies.
5. Weak relationships between the value chain actors at different functional levels (producers to wholesalers) and within the enabling environment and supporting services.

Strategic Constraints

The above constraints manifest within the system as the high cost of growing out fish. Addressing this constraint is particularly important given that as more fish farmers have entered the sector, the price of farmed fish has slowly decreased. In order to remain profitable and increase incomes, farmers must reduce their cost of production.

¹Figures from MANR Delta state and from field survey. Figure is inclusive of homestead farmers, which number approximately 10,000.

²Given that the majority of cultured fish in the Niger Delta is catfish, the pond demonstration will focus on the production of catfish.

Analysis of Options

In selecting the pond demonstration MADE has chosen to leverage and replicate the work of PIND. PIND has successfully piloted demonstration ponds in Ekpan, Delta State. A recent assessment of PIND's demonstration ponds found that impacted pond farmer's on average increased their gross profit margin from 5% to 27% through improvements in pond productivity. Given the success of the PIND intervention in Delta State, MADE has decided to pilot the pond demonstration in Rivers State.

In piloting the pond demonstration, there are three models which MADE has the option to adopt.

Model 1: Collaborate with a feed company³ to identify and select a local technical service provider who would manage the farmer training and demonstration ponds during the first production cycle. The technical service provider would simultaneously train the feed companies' staff to train and manage the demonstration pond, with the expectation that in the second production cycle feed company staff would be responsible for the training of farmers and management of ponds.

Model 2: Collaborate with a feed company to identify and select a local technical service provider who would immediately conduct a technical and enterprise development 'training of the trainer' course with feed company staff. Feed company staff would then train and manage the demonstration pond from the first production cycle.

Model 3: Utilise government extension workers to train farmers and manage the demonstration pond. In this model, a feed company would cost-share with MADE to train government extension workers to manage farmer training and demonstration ponds.

MADE has chosen to adopt **Model 1**, which puts feed companies at the centre of the intervention, increasing the replicability of the intervention as the demonstration model is incorporated into the marketing efforts of feed companies.

Description of Intervention

A demonstration pond is a "model" fish pond which is utilised to train fish farmers on the technical and managerial aspects of a successful fish farming business. In order to implement a demonstration pond, MADE must undertake the following major activities in roughly three phases:

Phase 1: Set-up

- Identify, select, and conduct an assessment of the capacities and incentives of pilot partners, namely feed companies, hatcheries, technical service providers, and producer associations.
- Negotiate with pilot partners to prepare agreements, activity plans, and activity budgets.
- Facilitate RSSDA to sponsor the physical pond infrastructure and set up the demonstration ponds.

Phase 2: Roll-out

- Facilitate producer associations to market the pond demonstration to their members.
- Facilitate feed company to sponsor feed.
- Facilitate hatcheries to sponsor fingerlings.
- MADE sponsors the technical service provider to provide technical and managerial training to pond farmers and feed company staff.
- MADE sponsors technical service provider to provide technical and managerial training of the trainer to feed company staff (who will then lead training in cycle 2).

³Feed represents up to 60% of the cost of growing out fish; feed companies are thus heavily incentivised to better penetrate the market using demonstration ponds.

- MADE sponsors baseline data collection, mid-project data collection, and end of project data collection.

Phase 3: Knowledge dissemination

- Facilitate RSSDA to organise quarterly demonstration pond open days to expose financial institutions, government agencies, private companies and producers’ associations to the demonstration ponds.
- Facilitate RSSDA, feed companies, hatcheries and producers’ associations to organise results sharing workshop with MADE collected M&E data.

Analysis of Potential Partners

In order to implement the demonstration pond, MADE will select a partner from the following category of partners:

Partner Category	Potential Partners
Feed Company	Top Feeds
Hatchery Company	AC ONE Nigeria Limited/ Mgboshimi Best Fish
Producer Association	Grass Roots Farmers Association
Facility provider	RSSDA

Table 1: Category of Partners

Partners were selected on the basis of their capacities and incentives.

Capacities

Top Feeds: Have the capacity to supply fish feed as per the demonstration pond’s needs and staff capable of providing training to farmers and managing the pond demonstration, if given the appropriate training.

AC ONE Nigeria Limited/ Mgboshimi Best Fish: have the capacity to supply quality fingerlings.

Grass Roots Farmers Association: Have the capacity to market the demonstration pond to their members and organise their members to attend.

RSSDA: Have the physical infrastructure and facilities required for the successful implementation of the pond demonstrations

Incentives

Top Feeds: Feed companies have the incentive to use pond demonstrations as a marketing opportunity for their feed, thereby increasing their market penetration. Top feeds also have the incentive to increase their staff’s knowledge through attending the trainer of the trainer course and through providing embedded services to farmers. Services which their staff will be able to incorporate into their marketing of feed.

AC ONE Nigeria Limited/ Mgboshimi Best Fish: have the incentive to use the pond demonstration as a marketing opportunity, thereby increasing their market penetration.

Grass Roots Farmers Association: The major incentive for producer associations is that it validates their purpose as an entity which facilitates farmer’s access to training that makes farmers more productive and profitable.

RSSDA: The RSSDA has the incentive of supporting pond demonstrations in order to use them as a marketing example of how they are furthering their stated goal of making Rivers State the “Fish Basket of Nigeria”.

Theory of Change

In order to become more competitive and remain profitable, farmers must improve their knowledge of pond management from a technical and managerial perspective.

Feed and hatchery companies have the incentive to see farmers become more productive and profitable, because farmers in turn buy more feed and fingerlings, thereby increasing the profitability of feed and hatchery companies.

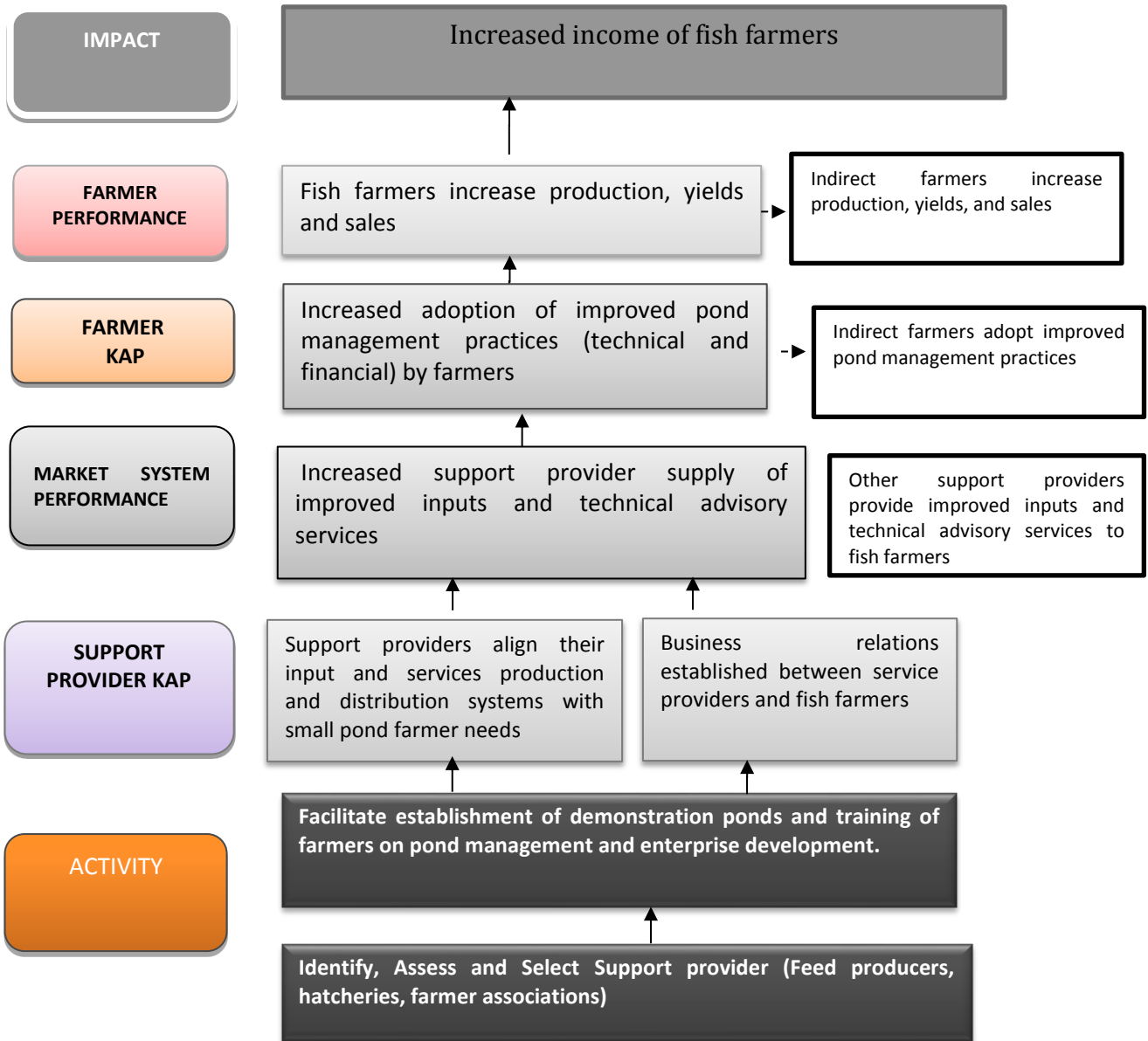
Feed and hatchery companies are therefore incentivised to support the pond demonstration, which will improve pond farmer's productivity and profitability by improving their knowledge of pond management from both a technical and managerial perspective. Once the benefits of the pond demonstration are realised (through increased sale of feed and fingerlings) feed companies will continue to promote farmer training, ideally incorporating demonstration ponds into their marketing strategy, thereby creating a positive feedback loop.

Potential Impact

The potential impact of the intervention is outlined in table 1 below.

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Aquaculture	2014 (six mo)	2015	2016	2017	2018	2019	2020	Total
Number of new beneficiaries, farmers per year	280	1 120	2 760	3 720	4 120	4 560	3 600	
Cumulative numbers farmers, beneficiaries	280	1 405	4 178	7 922	12 084	16 707	20 370	
NAIC per HH (NGN)	34 282	44 016	45 360	44 691	41 466	39 736	30 254	
NAIC per HH (GBP)	130.85	168.00	173.13	170.58	158.27	151.66	115.47	
Aggregate Net Additional Income (NAIC)	9 599 024	61 842 420	189 513 872	354 045 816	501 079 776	663 868 976	616 277 052	
Aggregate NAIC (GBP)	£ 36 637	£ 236 040	£ 723 335	£ 1 351 320	£ 1 912 518	£ 2 533 851	£ 2 352 202	£9 145 904

Draft Results Chain



Exit plan

The exit plan is that the feed companies take over the demonstration ponds as part of their marketing strategy.

Roles and responsibilities

S#	Actors	MADE's offer	Roles & Responsibilities
1	Feed companies	An opportunity to increase market share directly through the demonstration quality feed to 100+ farmers and indirectly to those related to trained farmers	Provide feed, Share cost of training of the training for staff, Organize both technical and enterprise development training for farmers, Overall management of demonstration, Monitoring progress of planned activities
2	Fish hatcheries	An opportunity to increase market share directly through demonstration of excellence of fingerlings to 100+ farmers and indirectly to those related to trained farmers	Provide fingerlings
3	RSSDA	An opportunity to meet reach their mandated targeted beneficiaries.	Provide ponds; security arrangements; and operational costs associated with pond and water management
4	MADE		Share pond production and management activities and other event costs and operational costs with other actors, Facilitate implementation of planned activities/events, Monitoring of results

Risk Analysis

Potential risks include;

- That the programme is attempting to incentivise feed companies to adopt a new marketing model that they are unfamiliar with. This risk will be minimized by involving the feed companies in the pond demonstrations from the onset and ensuring the successful implementation of demonstration ponds. As the market develops some companies may also wish to initiate demonstration ponds and involve MADE in their activities.
- That trained feed company staff will drop out of the programme. This risk could be mitigated by the feed company insisting that trained staff remain for two production cycles (for example) or by incentivising them monetarily. This is a perennial problem in Nigeria and in the Niger Delta region, and affects most sectors, as expansion of the real non-oil and gas economy sucks up the limited available experienced human resources.
- Outbreaks of political conflict with some disruption or violence in Rivers State represents a risk. This is more likely to occur mostly in certain locations and hotspots during the run-up to and immediate aftermath of elections, and not throughout the programme period. This will be mitigated by the security team remaining up to date on hotspots, and the project staff adapting the training schedule and staff movements accordingly. We do not anticipate a return to the MEND type of conflict as being very likely and the Niger Delta region is not a conflict zone in the original sense. It suffers less violence and terrorism than other parts of Nigeria but does suffer criminal activities and some kidnapping (although this has reduced).
- That demonstration pond participants will be unable to pay their transport costs. For indigent farmers, the partnering producer associations could underwrite the transport costs and recoup after harvest and sales. This is a practical difficulty that needs to be addressed.