



AQUACULTURE

Monitoring & Evaluation Report

Quarter Four :
October - December 2020



2.1.1 Key Achievements: Aquaculture

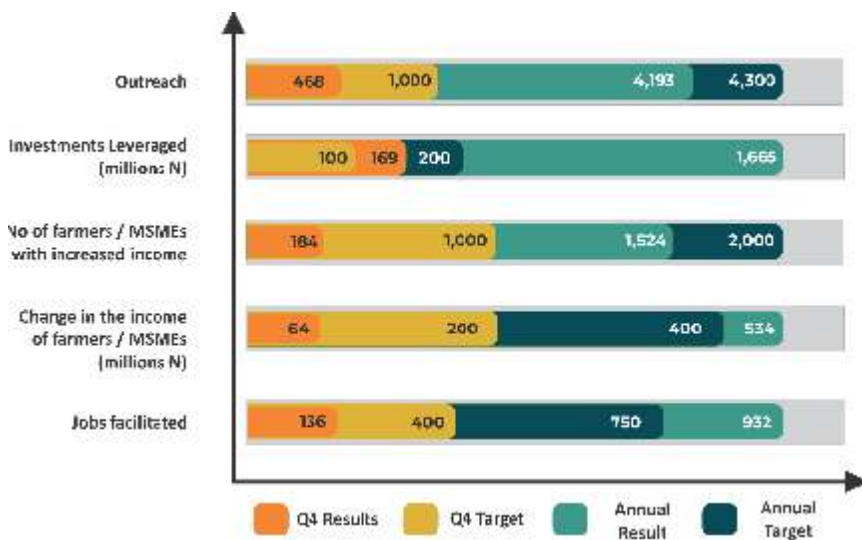
PIND's interventions in the aquaculture sector focus on improving the efficiency and productivity of fish farmers and processors through improved knowledge of best fish farming practices, access to improved processing technology as well as quality input, market, and finance for farmers/ The sector's activities are driven by aquaculture service providers working with input companies, fabricators and other market actors.

In the period under review, PIND focused its activities on linking farmers and processors to viable sources of

finance and inputs in collaboration with market actors and service providers. Also, we worked with the lead market actors to accelerate the implementation of interventions that were impacted by Covid-19 incidence. Subsequently, the demonstration and awareness creation activities on the improved processing technologies were expanded to reach more fish processors in the coastal communities. PIND also worked with selected hatchery operators to produce quality fish seeds for farmers in the region and continued to oversee and track the expansion of the training on good pond management and business practices to more farmers by service providers and partner input companies.

KEY INDICATORS OF PROGRESS – SUMMARY FROM AQUACULTURE INTERVENTION Q 4 DASHBOARD

Figure 1. Performance status of aquaculture interventions as at Q4 2020



Increasing outreach to and processors on better pond management practices

PIND leveraged its network of service providers to accelerate and expand outreach activities to more fish farmers and processors across the region. A total of 468 (252 Female) fish farmers and processors were reached during the quarter across seven States (Figure 1). Table 2 presents a summary of results from the implementing partners in the reporting period.

- o Marich Agro Allied, a service provider based in Delta State with the support of PIND, provided capacity building training to 133 fish farmers on best pond management training and business skill training using the NAEC curriculum to build their capacity to access finance.

- o Three training programs were organized by Arkshore Consult, a service provider based in Ondo State to reach 73 fish farmers with a focus on improved management practices and linkages to finance.
- o ALPHAKINZO, a service provider based in Ondo state trained 100 farmers on pond management practices in the state.
- o Similarly, a demonstration to promote the adoption of improved smoking technology was carried out across 4 GMOU communities in Bayelsa State with a total of 162 participants (144 females). The communities are Bisangbene, Bilabiri I, Bilabiri II and Amatu II in Bayelsa State.

Table 2. Distribution of training and demonstration activities in Q 4 2020

	Delta	Imo	Cross Rivers	Bayelsa	Ondo	Total
Number of training programs	4	1	1	4	3	12
Number of service providers	2	1	1	2	2	5
Number of farmers reached	133	11	10		152	306
No of fish processors reached		-		162		162
Total						468

Facilitating linkage to finance for fish farmers and processors in the riverine community.

Lack of access to finance has continued to be a huge concern to farmers/MSMEs. This quarter, PIND provided support to female fish processors in the GMOU communities to facilitate access to finance by partnering with the Agricultural Women and Youths Entrepreneurs in Nigeria (AWYEIN), a social enterprise based in Ondo State, to provide financial literacy training to 29 fish processors in Madangho, Delta State. The aim was to strengthen them to access loans from AWYEIN credit program, which has already yielded with one of them receiving a soft loan of N150,000. PIND would continue to monitor and deepen its access to finance activities in the GMOU communities in collaboration with Sombreiro Kapital (SK)

Also, 85 fish farmers were supported with financial linkages with 43 from Bayelsa, Delta and Ondo states trained on business skills using the NAEC curriculum. They have been linked (appraised and recommended) to Sterling Bank in Edo State for a loan of about N25m in collaboration with Sombreiro Kapital. Within the reporting period about 30 has been approved, and offer letters given to the famers.

Improving access to quality fish seeds for fish farmers

The use of quality fish seeds/fingerlings is one of the major contributors to improved productivity of farmers in the aquaculture sector. In previous quarters, PIND partnered with six private hatchery operators from Delta, Ondo, and Rivers States to raise broodstock banks from the pure lines produced by the Fisheries Society of Nigeria (FISON). Two of the selected hatcheries in Ondo and Delta State tested out the broodstock, which led to the production of about 80,000 fish seeds. 50,000 of the fish seeds have

been sold out as juveniles with a total sale of 1.5 million Naira at 30 Naira/seed.

During the quarter, PIND continued to monitor the development of the broodstock and the outcomes of the various linkages facilitated with other hatchery operators and market actors. So far, all the hatcheries have started using the broodstock for the production of fish seeds. During the period, over 435,000 fish seeds were produced by five of the partner hatcheries out of which 345,500 were sold at a value of N8,637,500, an average of N25/seed. This brings the total seeds produced to 515,000 as against the 500,000 targeted for the year.

As an unintended outcome, a hatchery in Lagos (outside the Niger Delta) purchased some of the broodstock and recorded a significant result with the production of up to 250,000 fish seeds which are being sold to farmers thus expanding the impact beyond the region.

Steering uptake of improved smoking technologies in the coastal communities

The chorkor oven and smoking kiln technologies were introduced by PIND as part of the effort to improve the efficiency of fish processors in the Niger Delta region. To sustainably promote the adoption of these technologies, PIND built the capacity of masons and fabricators to enable them to produce and market these technologies commercially. PIND also worked with them and other service providers to carry out demonstrations to drive the adoption of the technologies, particularly in the Chevron's GMoU and coastal communities.

This quarter, PIND commenced engagement with the Ilaje RDC and some service providers in Ondo State to support the adoption of chorkor ovens in the

communities. So far, the RDC has expressed its willingness to promote the adoption of 30 ovens in the state. Also within the reporting period, 10 technologies (5 chorkor ovens and 5 smoking kilns) were adopted in Delta, Imo, and Rivers States bringing the total technology adopted in 2020 to 109 (86 chorkor ovens and 23 smoking kilns) as against the target of 150 set for the year.

Increasing income of fish farmers and processors through the adoption of improved practices

As farmers adopt the improved practices from the various demonstrations and training programs, they are expected to experience better feed conversion ratio and reduced mortality leading to improved productivity and income. In the previous quarter, PIND developed a framework for tracking and projecting the impact of the intervention activities on the farmers using multipliers obtained from previous impact assessments, complemented with outcomes data from field monitoring visits, including the rate of adoption by program participants.

In the current quarter, the data obtained were also used in estimating the income of the 306 farmers reached this quarter. The estimated net income for farmers in aquaculture was 58,980,370 Naira. In estimating the income of the 306 participating fish farmers in Q4 2020, a 72.3%¹² adoption rate obtained from the outcome monitoring was used to determine Q4 2020 adopting farmers, which was 221 farmers. The low adoption rate in 2020 appears to be due to the disruptions experienced by farmers as a result of the COVID-19 pandemic. It initially disrupted the flow and also led to a rise in the prices of inputs.

The income for 23 fish processors who adopted smoking kilns in Q4 was calculated using the average monthly income from previous assessment of 83,669.35 Naira as the multiplier. The net at tributable income change for these fish processors in Q4 2020 was estimated to be 5,773,185 Naira. The change in income for both farmers and processors in Q4 is

¹² In 2019, the farmers' adoption rate was 79%.

¹³ The jobs are mainly part-time jobs that were converted to full-time equivalent. In Q4 2020 Processors created 51 FTEs and Farmers 85FTEs

¹⁴ pH is a measure of how acidic/basic water is. The pH of water is a very important measurement concerning water quality. The

64,753,556 Naira, bringing the total change in income for 2020 to 534,964,832 Naira (Figure 1).

Using a user-benefit ratio calculator, it was estimated that 1,524 of the 2,937 farmers/MSMEs who adopted the improved practices in 2020 experience an increased income of 534,964,832 Naira (figure 1), at an average of 350,967 Naira per farmer. The income of aquaculture farmers was estimated for production of 2 fish ponds for one cycle carried out in 2020.

Creating opportunities for farmers to create jobs

As farmers adopt improved practices and expand production, they engage more labor to carry out various pond management activities such as pond preparation, stocking, sorting, feeding and harvesting of the ponds. Using job multipliers from previous impact assessments on farmers in the sector, complemented with data on adoption rate from the outcomes monitoring visits carried out by project's co-facilitators, it was estimated that about 136 new jobs¹³ were created by 306 farmers/processors in Q4 2020, bringing the total job to 932 by the 1,524 adopting farmers/processors in 2020.

Leveraging investment into the aquaculture sector to catalyze technology adoption

Adopting improved practices makes farmers to increase their spending. For aquaculture farmers, most of the spending on the new innovations include buying of improved feeds, nets, improved fish seeds, regulating the level of water pH,¹⁴ and many more. These costs are the extra equity investments due to the adoption of the introduced improved practices.

From the 2020 outcome monitoring which took place in the previous quarter, the average number of fish pond owned was two. Applying the multiplier in computing this Q4 2020 equity investment for 221 fish farmers who adopted new practices, each farmer invested an average of 765,815.68 Naira for two fish ponds stocked. The equity investment leveraged for the sector in Q4 2020 was 169,446,275 Naira¹⁵ (Figure1).This brings the total equity investment in the sector to 1,665,525,433 Nairain 2020 (Figure 1).

range goes from 0 to 14, with 7 being neutral. pHs of less than 7 indicate acidity, whereas a pH of greater than 7 indicates a base.

¹⁵ Other investments by fish processors who adopted chorkor oven and smoking kilns have been reported in Q1 and Q2.