



RESEARCH  
PROGRAM ON  
Fish  
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# Impacts of COVID-19 on Aquatic Food Supply Chains in Nigeria

February – July 2020

Lucinda Middleton, Ajibola Olaniyi, Sunil Siriwardena, Leah Rosen, Saadiah Ghazali, Goutam Dhar and Ben Belton.

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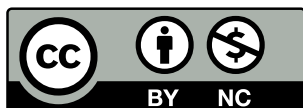
## About FISH

The [CGIAR Research Program on Fish Agri-Food Systems \(FISH\)](#) is a multidisciplinary research program. Designed in collaboration with research partners, beneficiaries and stakeholders, FISH develops and implements research innovations that optimize the individual and joint contributions of aquaculture and small-scale fisheries to reducing poverty, improving food and nutrition security and sustaining the underlying natural resources and ecosystems services upon which both depend. The program is led by [WorldFish](#), a member of the CGIAR Consortium. [CGIAR](#) is a global research partnership for a food secure future.

## Contact

WorldFish Communications and Marketing Department, Jalan Batu Maung, Batu Maung, 11960 Bayan Lepas, Penang, Malaysia. Email: [fish@cgiar.org](mailto:fish@cgiar.org)

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Front cover, Ajibola Olaniyi/WorldFish

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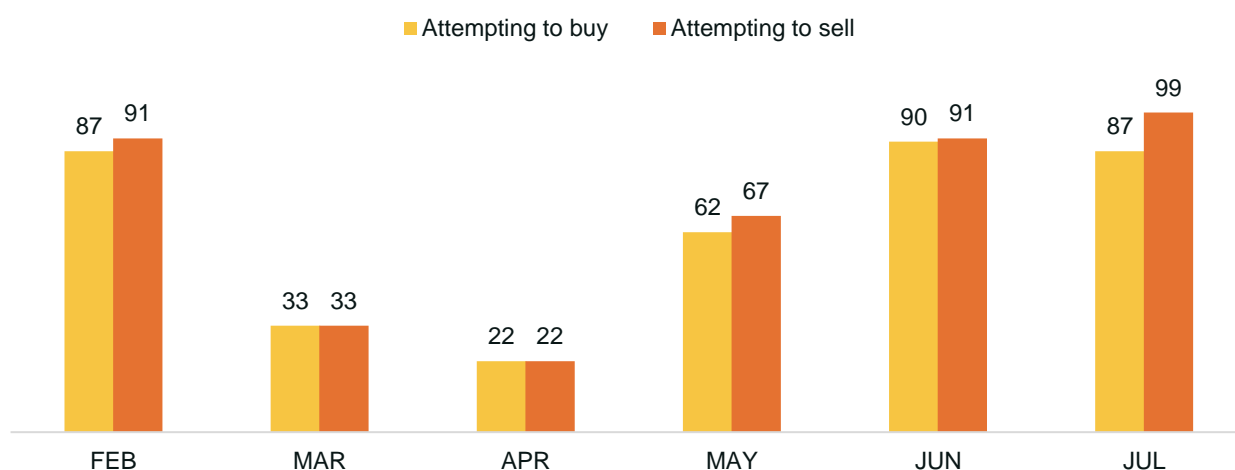
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# 1. Overview

We conducted a bi-weekly phone survey with fish supply chain actors in Nigeria to assess impacts of COVID-19 on the availability and price of aquatic foods and production inputs. Respondents answered questions about their activity during the months of February and July 2020. The sample totalled 92 respondents, comprised of the following: feed mills (4), feed sellers (12), fish hatcheries (12), fish farmers (24), fishers (11), fish traders (8), processors (12) and retailers (9). The states covered included Oyo (31%), Lagos (20%), Ogun (20%), Ondo (16%) Kwara (6%) and Osun, Bayelsa, Delta, Imo and Nasarawa (6%). A complete overview of survey results can be accessed [here](#).

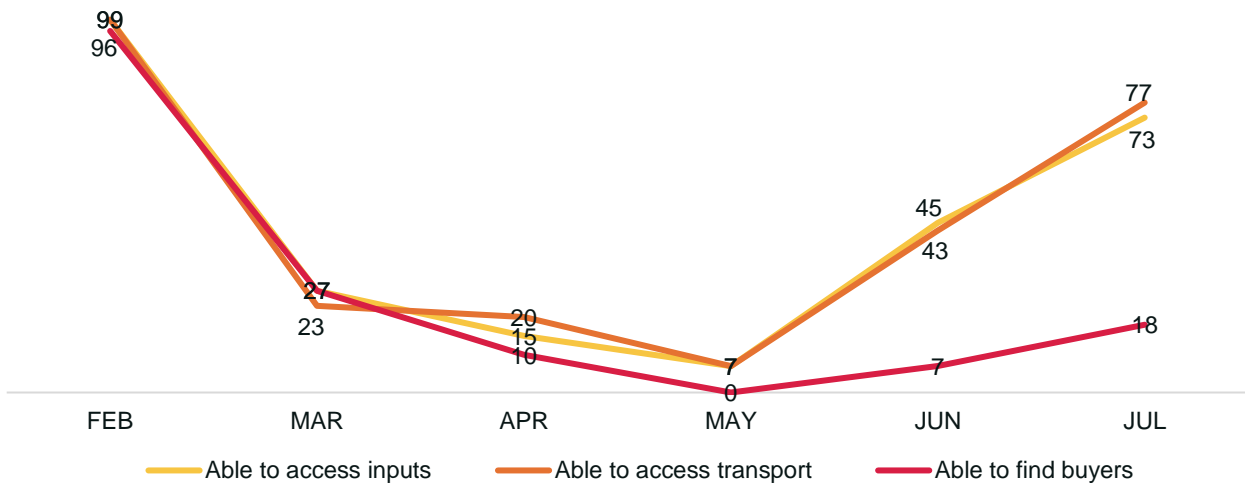
## 2. Key findings

The percentage of respondents attempting to buy inputs or sell products declined sharply between February and April. The share of respondents attempting to buy inputs fell from 87% to 22%, while those attempting to sell products fell from 91% to 22% (Figure 1). The share of respondents attempting to buy inputs rose back to 87% by July, whilst the share attempting to sell inputs jumped to 99%, suggesting an increase in demand after COVID-19 lockdown measures were lifted at the end of April.



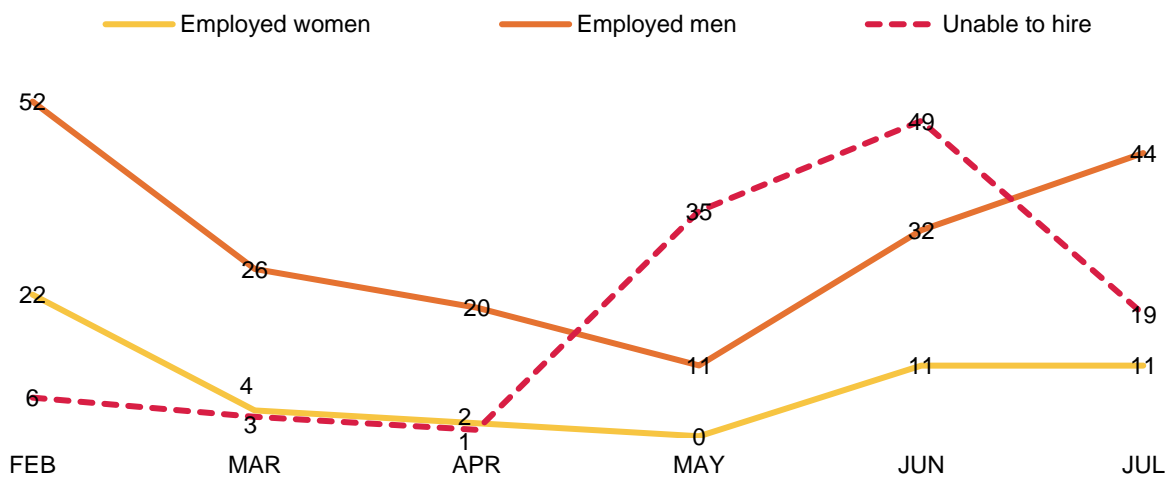
**Figure 1.** Respondents attempting to buy or sell inputs, by month (%).

The share of respondents able to access inputs and transport followed a pronounced 'U shaped' curve (Figure 2), dropping from 99% to 7% between February and May but recovering in the following two months, to reach 73% and 77% in July, respectively. The percentage of respondents unable to find buyers for all the products they expected to sell plummeted from 96% to 0% between February and May, but was much slower to recover than the share of respondents able to access transport/inputs, increasing slowly to just 18% in July, suggesting a major slowdown in demand.



**Figure 2.** Respondents able to access inputs, transport or buyers, by month (%).

Employment of casual workers followed a similar ‘U shaped’ pattern. The percentage of respondents employing male casual workers dropped from 52% in February to 11% in May, but recovered gradually to 44% by July. In contrast, the share of respondents employing female casual workers fell from 22% in February to 0% in May, increasing and remaining stable to 11% in June and July, suggesting differentiated impacts of COVID-19 on access to paid work for men and women, with women’s access affected most severely (Figure 3). The percentage of respondents reporting being unable to hire labour was initially low, but climbed from 1% in April to 49% in June, before falling to 19% in July.



**Figure 3.** Respondents employing women or men casual workers, or unable to hire casual workers, by month (%).

In May, we began asking respondents whether they had experienced delays in accessing inputs and selling products, and whether they experienced any reduction in the quantity of products sold as compared to usual expectations. 70% of respondents experienced delays in selling products in May, this number rose to over 90% in June and July, suggesting slowing demand, similar to results presented above. In contrast, while over 88% of respondents experienced delays in accessing inputs in May but the number fell to 68% in

July suggesting that restrictions on transport became somewhat less limiting over this period. The share of respondents purchasing lower quantities of inputs than usual remained extremely high throughout these months, at well over 90%, again tying into the picture of reduced demand being transmitted back along the supply chain from consumers to actors further upstream. The share of respondents reporting selling lower quantities of products than usual also remained close to 100% during all three months.

From May onwards, we asked respondents if they had sufficient income to pay for their household's weekly expenses, and how the quantity of purchased food in the past month compared to usual. Almost all respondents (close to 95%) reported receiving insufficient weekly income to cover their living expenses between May and July. Consequently, 72% of respondents reported purchasing less food than usual during May. This number fell slightly to 55% in June, possibly reflecting the timing of celebrations at the end of Eid, but rose again to reach 85% in July. This finding suggests that respondents' food security was severely negatively impacted during the initial COVID-19 outbreak and did not improve, despite lessening restrictions.

From May onwards, we asked respondents if they received any form of assistance and whether they had travelled more than one mile from home during the past month (as an indicator of the severity of movement restrictions). No respondents reported receiving any assistance in May and June, and just one respondent did so in July, citing friends and family as the source, suggesting that public assistance was not widely available. The share of respondents travelling more than one mile increased from 62% in May to 98% in July, reflecting the relaxation of lockdown measures during this period, leading to increased movement after restrictions were lifted.

## Hatcheries

Half of hatcheries ceased operations in March and April, down from 92% that were operational in February. The number of days on which hatcheries operated also roughly halved during these two months, from 24 to 12, recovering to around 24 thereafter. The main reasons for suspending operations were temporary closures related to COVID-19 (36%), restrictions on road transport preventing movement (21%) and low demand (14%). 100% of hatcheries operated in May and June, falling slightly in July to 92%.

Total hatchling production in surveyed hatcheries fell by 25% between February and March (down from 3.2 million to 2.4 million) and remained stable until a sharp increase in June (5.4 million) before falling in July to a similar level as previous months. Revenues dropped between February and March (-83%) and remained low until July. Sales of fish seed followed a similar pattern. Clarias catfish and tilapia accounted for most of the fish seed produced and sold.

## Feed Mills

100% of surveyed feed mills operated in February, falling to 75% and 50% in March and April, respectively, mainly due to restrictions on road transport preventing movement (33%) and reduction of production due to low demand (33%). All mills returned to operation from May onwards. The average number of days operated per month fell from 23 in February to 9 in April, rebounding to around 20 thereafter.

The average procurement price of raw material remained relatively stable between February and May but gradually increased thereafter, rising from NGN 107,971/t in

February to NGN 269,583 /t in July, driven mainly by increase in the price of maize and soy meal.

The quantity of raw materials procured by feed mills declined sharply, from a high of 3012 t in February, to just 60 t in July. The total amount of feed manufactured by surveyed feed mills peaked in March and April, at around 1400 t/month, but remained very low thereafter, shrinking to just 78 t in July. In May we began asking respondents about the quantity of feed sold in the past month. Consistent with the pattern of procurement and manufacturing, feed sales were also low and falling, reaching just 46 t in July.

## Feed Sellers

Feed sellers sell floating and sinking pelleted feeds were surveyed in Nigeria. An increasing number of pelleted feed sellers stopped operating in March (75%, up from 8% in February) and 100% of surveyed sellers ceased operation in April. Business closures during March and April were due mainly to temporary COVID-19 related suspensions (41%) and restrictions on road transport preventing movement (41%). One-third of pelleted feed sellers remained closed in May. Of those not operating, 80% cited pausing operations due to COVID-19 as the major cause. All feed sellers were operating again from June onward. The average number of days pelleted feed sellers operated followed a similar 'U shaped' pattern, dropping from 20 days in February to zero in April before rising 8 days in May and 23 days in July.

Feed sales halted completely in April as a result of business closures, after a 34% increase between February and March, from 469 t to 627 t. The quantity sold remained low after April, scarcely increasing to 26 t in July. The sales price of feed remained fairly steady throughout this period, increasing by around 6% in June/July compared to other months. The main pelleted feed purchased and sold was 37-45% protein floating fish feed.

## Farmers

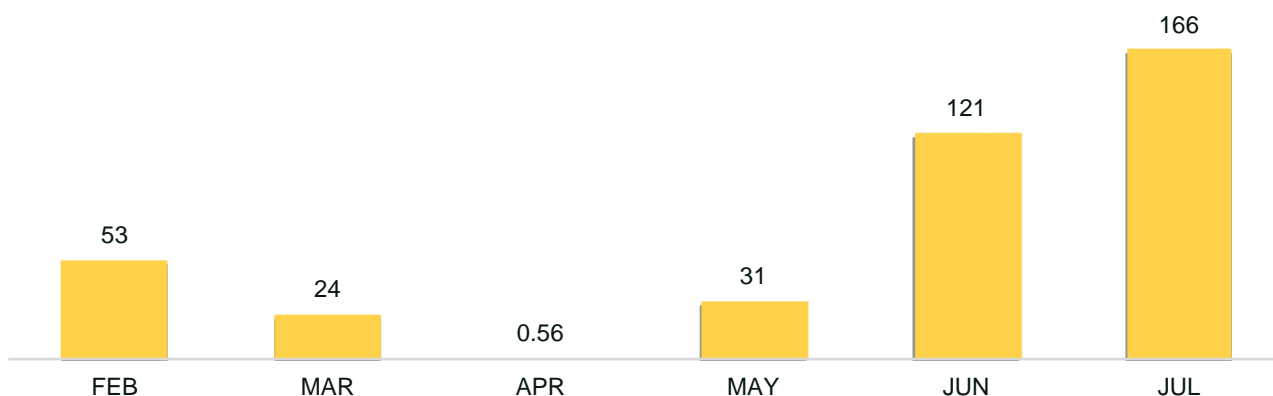
All surveyed farms were operational in February. An increasing number temporarily stopped operations in March (25%) and April (29%). Reasons for doing so included low demand (38%), temporary COVID-19 related suspensions (31%) and restrictions on road transport preventing movement (31%). Similar to other actors surveyed, all farmers were operational again by June and July.

The share of farmers procuring inputs fell sharply from 83% in February to 29% in April, before climbing to 91% in June, but fell back to 70% in July. The share of farms selling fish followed an even more pronounced 'V shaped' pattern, dropping from 79% in February to 6% in April, before climbing steadily to 100% in July.

The quantity of feed procured by surveyed farmers was low from February to June, fluctuating between 2 t and 17 t, but jumped more than ten times from June to July, to reach 111 t, in line with seasonal increases in farming activity that take place around this time. Floating feed was the main feed purchased between February and July. Surveyed farmers did not purchase fish seed from hatcheries between March and June, but a total of 119,000 and 111,000 fingerlings were purchased in February and July, respectively.

Sales of fish followed a 'V shaped' trend. Total fish sales by surveyed farms fell from 53 t in February to almost nothing in April, before rebounding to exceed February levels in June (121t) and July (166 t) (Figure 4). The declines in sales between February and April caused income for surveyed farmers to drop by 98% in the same period. Fish farmgate

prices remained relatively stable around NGN 600/kg, though dropping slightly to NGN 447/kg in May. All reported fish sold were either catfish or tilapia.



**Figure 4.** Total quantity (t) of fish sold by farmers, by month.

## Fishers

Most surveyed fishers fished in inland waterbodies or rivers. All fished with boats, averaging 3-4 meters in length. Three-quarters of boats had engines, averaging 28Hp in size.

27% of fishers did not operate in February, mainly due to seasonal reasons. The share of fishers who did not go fishing increased to 45% in March and April, due to temporary suspension of operations linked to COVID-19 (around 40%) and restrictions on road transport preventing movement (around 35%). All fishers operated in May and 92% fished in June, but only 61% operated in July, due to bad weather. The average number of days per month fished ranged from 11-15 between February and June but fell to 8 in July. In April, fishers landed a total of 0.17 t of fish and sold 0.15 t (a decline of 19% and 16%, respectively) compared to March, resulting in a 26% drop in income. There was a substantial increase in catch in May (1.76 t), rising further to 3.08 t in June, of which 2.89 t was sold, before dropping somewhat in July to 2.49 t.

Almost all fishers consumed some of what they caught, in all months. From February to April when catches were low, consumption was limited to between 1 and 2.6 kg per household per month. The quantity of fish consumed by fishing households each month jumped to 21.4 kgs in May as catches rose, falling to around 17kgs in June and July. The share of catch consumed by fishing households fell from 30% in February to 7% in July, as total catches increased.



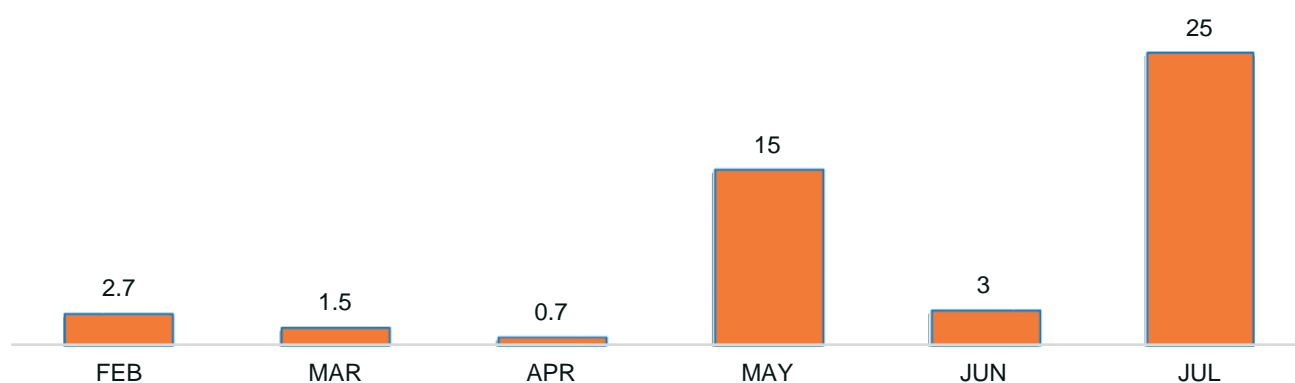
## Processors

The activities of fish processors (all involved in smoking fish) are closely linked to those of fishers. Accordingly, over half of the surveyed processors stopped operating in March and April, citing COVID-19 (48%) and road and travel restrictions preventing movement (35%). By May, all processors were operational again and they remained so until July. The quantity of processed fish sold by surveyed processors declined gradually between February and April, sales began recovering from May onwards, with respondents selling twice as much in July (3.1 t) as they did in February (1.7 t). Fish processors are known to sell their products in distant markets in other states, so an increase in transport costs may have impacted their ability to market their products.

## Traders

Similar to other actors, an increasing number of fish traders suspended operations in March (33%) and April (50%), due to temporary closures due to COVID-19 (40%) and restrictions on road transport preventing movement (60%). Only two traders were not operating in May, both due to suspending business temporarily due to COVID-19, and 100% were operational again by June.

Farmed fish were traded throughout the entire survey period, but no respondents reported trading marine fish, and only a small quantity of freshwater capture fish were traded in June (0.3 t). Catfish accounted for all the farmed fish sold by surveyed traders. The quantity of catfish sold was low between February and April, falling from 4.1 t to 1.0 t, but sales improved in May (22.7 t) and climbed further in July (40.2 t) after a drop in June. Traders' incomes followed a similar pattern to volumes sold (Figure 5). The average wholesale price of fish was fairly steady from February to June, at between NGN 669-710/kg, but dropped by 10% as the quantity of fish sold fluctuated between May and July.



**Figure 5.** Total value (million NGN) of farmed fish sold by traders, by month.

## Retailers

Over three quarters of surveyed fish retailers suspended operating in March and April for reasons related to COVID-19 (42%), including road restrictions (28%). Over half were not operating in May citing reasons related to COVID-19, which fell to 25% in June. The average number of days fish retailers operated followed a similar pattern, falling between February and April (21 days to 2 days) before rising back to the same level as the beginning of the survey period (22 days) in July.

Similar to fish traders, fish retailers did not sell any marine capture fish during the survey period. Freshwater capture fish were sold in all months with the exception of July, but the quantity sold remained stable but low (0.3t) between April and June, with peak sales occurring in March (0.05t).

Farmed fish were sold in all months, but sales plummeted by 99% in March and April (from 9.1 t to 0.02 t), before gradually climbing back to July 5.85 t, though not reaching the same levels as the beginning of the survey period. As a result, the average retail sales price per kilogram rose from NGN 792/kg in February to NGN 1200/kg in April (+51%), falling back to NGN 603/kg in July as the supply of fish increased. Fish retailer income also dropped by 99% between February and April mirroring sales, with farmed fish contributing the largest loss of revenue. Catfish accounted for the bulk of farmed fish sales throughout the survey period.

## 3. Recommendations

- Safeguard the ability to access transportation and ensure movement of merchandise by designating fish and supplies of fish production inputs as 'essentials'.
- Keeping markets open and operating safely is key to safeguarding demand and keeping the supply chain functioning adequately.
- Raise awareness of ways to manage production and post-harvest activities in a COVID-19 safe manner.
- Provide financial support to actors of supply chain who have lost substantial amounts of revenue to shore up cash flows and enable continued business activities.
- Establish programmes through the Bank of Agriculture to help actors in the fisheries and aquaculture sector to access loans at low interest rate so as to cushion the effects of the pandemic.
- Expand the 'Anchor Burrowers Programme' to accommodate more beneficiaries in the aquaculture value chain.
- Reorient fish marketing strategies to include delivery of products to shopping malls, supermarkets, hotels and recreational facilities.
- Establish a central fish wholesale market or develop market facilities at locations close to where fish farms are clustered to help farmers and buyers access competitive markets more easily.
- Raise awareness of how to use digital channels to advertise and deliver fish products.
- Scale up appropriate technologies and arrangements for delivery of live fish to mitigate losses and delays during fish harvesting and marketing.



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