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Impacts of COVID-19 on aquatic food supply chains in Egypt

February – November 2020

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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.

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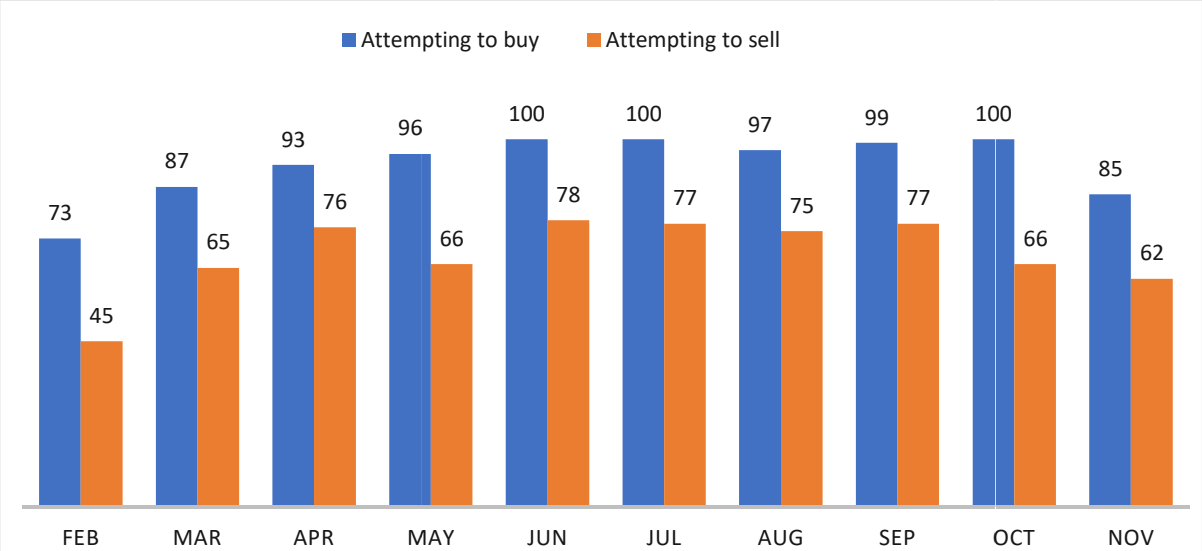
1. Overview

We conducted a bi-weekly phone survey with fish supply chain actors in Egypt to assess impacts of COVID-19 on the availability and price of aquatic foods and production inputs. Respondents answered questions about their activity between the months of February and November 2020. The sample totaled 75 respondents, comprised of the following: feed mills (7), feed sellers (10), fish hatcheries (10), fish farmers (25), traders (7) and retailers (16). The areas covered included the Governorates of Kafr El-Sheikh (52%), Sharkia (33%), Beheira (4%), Fayoum (4%), Giza (3%), Damietta (3%), Cairo (1%) and Dakahlia (1%). Most farmers were located in the Kafr El-Sheikh and Sharkia Governorate. A complete summary of survey results can be accessed here.

2. Key findings

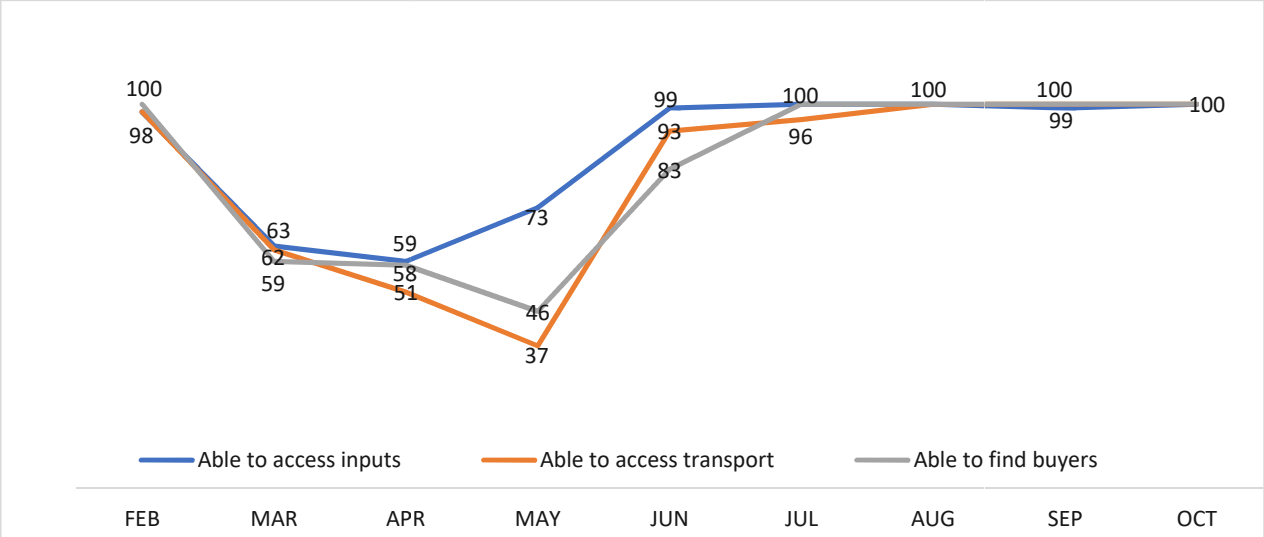
The percentage of respondents attempting to buy inputs or sell products gradually rose between February and June and remained stable over the survey period. The share of respondents attempting to sell inputs rose from 45% in February to 78% in June and remained relatively stable between March and September, before falling to 62% in November (Figure 1). The percentage of respondents attempting to buy products rose from 73% to 100% in June, staying relatively stable until October before falling slightly to 85% in November, suggesting that the demand remained relatively stable during and after the initial COVID-19 lockdown measures.

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



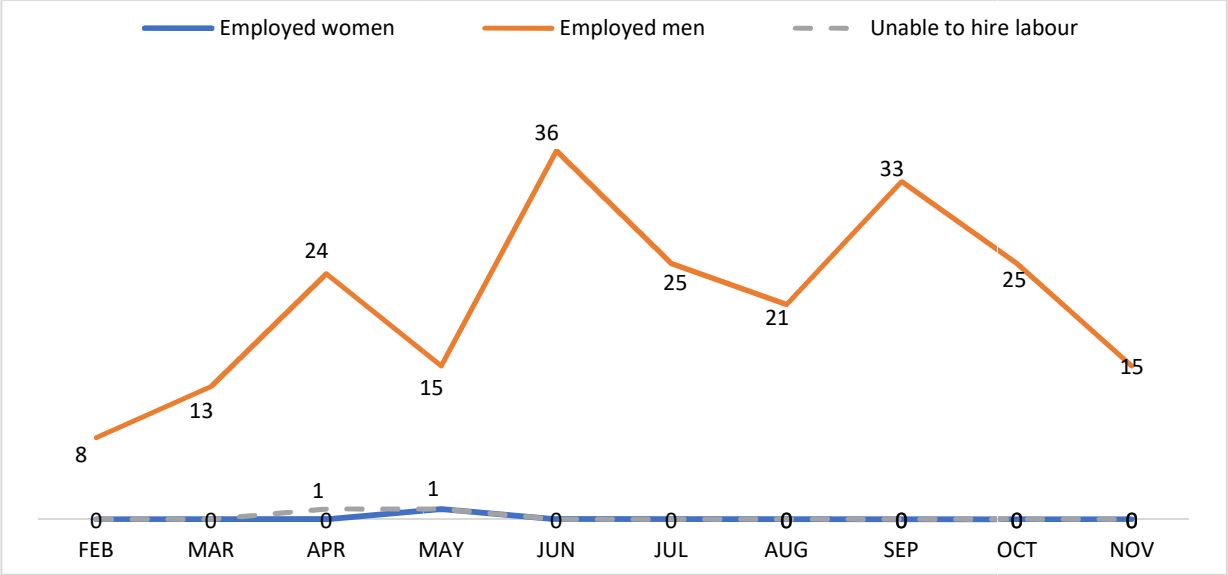
The share of respondents able to access inputs, buyers and transport followed a 'U shaped' curve between February and June and remained stable between July and November (Figure 2). The percentage of respondents able to access inputs dropped from 100% to 59% between February and April before climbing back to 99% in June and remained at 100% until November. The share of respondents able to find buyers and access transport followed the same trend and halved from 100% and 98% to 46% and 37%, respectively, between February and May, but also recovered to close to 100% by July, and stabilized thereafter, suggesting an increase in demand after the COVID-19 lockdown measures were lifted at the end of May.

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



The percentage of respondents employing male casual workers fluctuated over the survey period, climbing from 8% to 25% between February and April before falling to 15% in May and then rising to 36% in June, before falling again to 21% in August. This number then rose again to 33% in September before falling to 15% in November (Figure 3). In contrast, only one respondent reported employing a casual female worker during the entire survey period. Despite the fluctuating share of businesses employing male labor, respondents did not experience challenges in hiring workers throughout the survey period, with only 1% unable to hire labor in the month of April, suggesting businesses' ability to find workers was not impacted by the lockdown measures.

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 or experienced any reduction in the quantity of products sold, as compared to usual expectations. In May, 42% of respondents reported that they had experienced delays in selling products and 63% reported that they had sold less than usual. These numbers increased to 47% and 72% in June, before dropping to 38% and 57%, respectively, in July. Both indictors

subsequently improved, with only 2% experiencing delays in selling products and 7% selling less than usual in the month of October. The share of respondents reportin experiencing delays in accessing inputs followed a similar yet more pronounced trend dropping from 36% in May to 4% in July. The share of respondents who reported using fewer inputs than usual fell from 47% to 14% over the same period, suggesting the impact of slowing demand and/or reduced cash flows. By October both indicators had significantly improved with only 9% of respondents using fewer inputs than usual in October. The share who experienced delays in accessing inputs remained at 1% in September, suggesting a growing demand after COVID-19 restrictions were lifted. In November, however, those who experienced delays in accessing inputs or reduced inputs remained low while those who experienced delays in selling products or reduced sales increased to 30% and 25%, respectively.

From May onwards, we asked respondents if they had sufficient income to pay for their household's weekly expenses, and how the quantity of food purchased in the past month compared to usual. Both these indicators improved between May and November. The percentage of respondents with sufficient weekly incomes grew from 77% to 91% over this period. 76% of respondents reported purchasing the same quantity of food as usual in May, which rose to 100% in July and remained stable until November, suggesting that respondents' food security and income improved after COVID-19 lockdown measures were lifted.

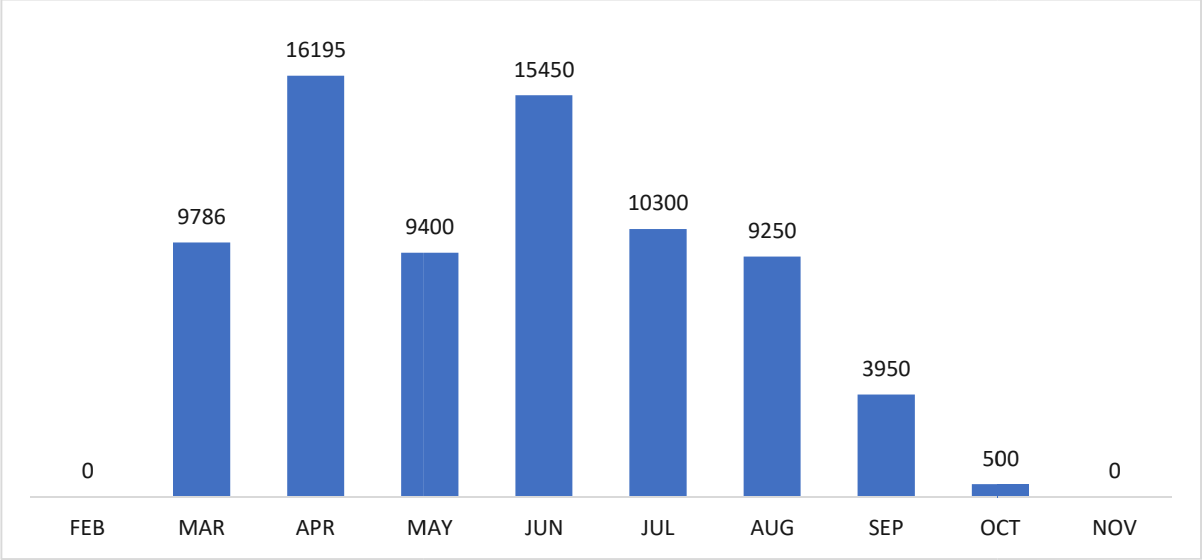
From May onwards, we also asked respondents if they had received any form of assistance and whether they travelled more than one mile from home during the past month (as an indicator of the severity of movement restrictions). The share of respondents travelling more than one mile from home remained stable between 96% and 100% from May to November, suggesting that COVID-19 related regulations did not restrict movement during this time period. Following the same pattern, the share of respondents receiving any form of assistance remained low, but stable during this time period. 5% and 3% of respondents received assistance in May and June respectively, with trade associations reported as the main source, with only 1% receiving assistance between July and October and none in November, citing the government as the main source.

Hatcheries

Although all surveyed fish hatcheries remained operational between March and October, none were operating in November, due to having sufficient stock. Total hatchling production in surveyed businesses rose from zero in February to 9.7 million in March, before a sharp rise in April (16 million) due to rising temperatures, falling again in May (9.4 million). This trend continued and sharply climbed to 15 million in June before quickly dropping in July (Figure 4). Production continued to fall, dropping from 10 million hatchlings to 500,000 hatchlings between July and October.

As the temperature rose in April, signaling the start of farming season, there was an 83% increase in the total quantity of fry sold in comparison to March. Despite the spike in hatchling production in June, the quantity of fry sold was low in June (4.6 million) and July (6.9 million) and consistent with the drop in production. There was a sharp fall in the quantity of fry sold between September and October, towards the end of the farming season. Tilapia accounted for all hatchlings and fry produced and sold. As no hatcheries operated in November, no hatchlings or fry were produced or sold during this month.

Figure 4. Total quantity (in 1000) of hatchlings produced, by month



Feed mills

All surveyed feed mills were fully operational between April and November; some had suspended their activity in February (57%) and March (29%) due to poor weather conditions as water temperatures are still too low during those two months for tilapia to eat artificial feed, though other fish such as mullet and marine species can eat artificial feed at this time of the year.

Average prices of common raw materials used in feed manufacturing climbed slightly between May and June (e.g. rising by 8% for rice bran and 12% for maize), before falling by around 5% in July. Subsequently, the price remained stable but climbed again in October, caused by an increase in the average price of soy meal (+22%) and maize (+18%) while all other raw material prices remained stable over this time period. The total quantity of raw material purchased by surveyed feed mills increased sharply from 1240 t in May to 3820 t in June and gradually dropped to 2025 t in September, jumping to 4014 t in October, the greatest quantity of raw materials purchased by feed mills over this time period, before quickly falling back to 2528 t in November.

The total amount of feed manufactured by surveyed mills rose by 5492 t between February and April, but quickly fell in May (3050t) and remained relatively stable until August, falling in September (-1426 t) before gradually rising to 2590 t in November. In May we began asking respondents about the quantity of feed sold in the past month. Sales for May stood at 3010 t, increasing by 8% to 3379 t in June, before dropping by 31% in July. Following the same trend as the quantity manufactured, sales continued to fall, with 1695 t sold in September, the lowest amount over this period, before jumping in October (+2525 t), the greatest quantity sold, and falling back to 2590 t in November.

Feed sellers

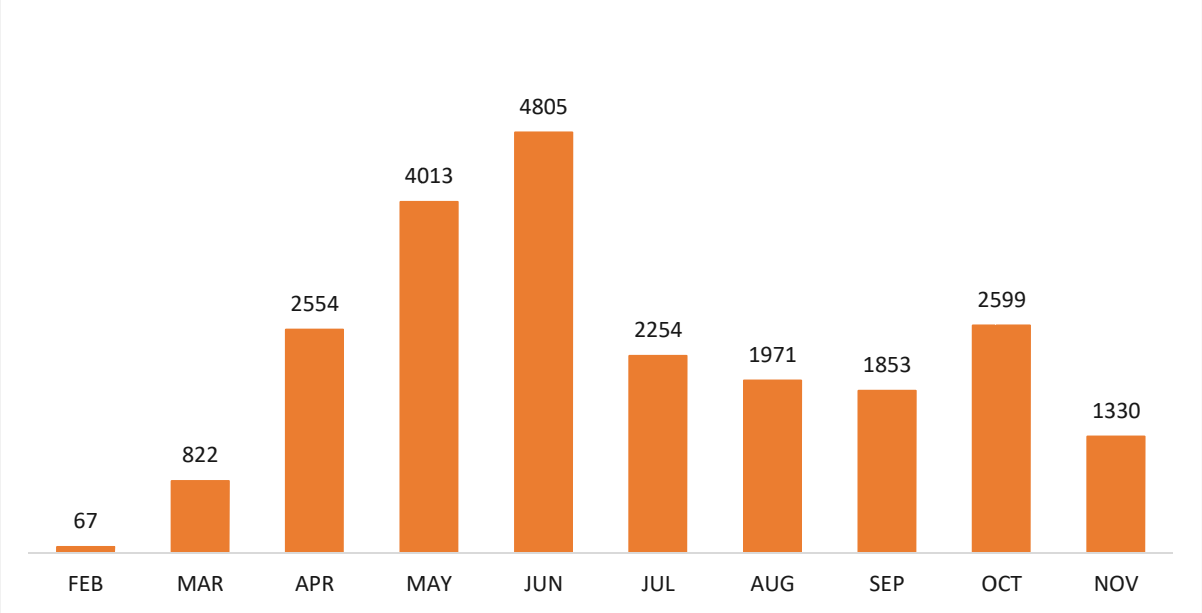
All feed selling businesses surveyed in Egypt sold pelleted feeds. All of the surveyed feed sellers were fully operational between April and November, while some suspended their businesses in February (60%) and March (10%) due to the off-season. The average number of days pelleted feed sellers operated steeply rose from 9 days in February to 23 days in April before falling to 16 days in

May and remaining stable in the following months, reflecting an increased demand from farmers for feed to meet the needs of production during April, when the temperature rose.

The total quantity of feed purchased by surveyed feed sellers gradually declined from 3293 t in May to 1642 t in July before slightly increasing and remaining stable in August and September. In October the quantity of feed purchased rose to 2592 t, the same quantity purchased in June, then fell by 49% to 1330 t in November, the lowest amount over the entire survey period. The average procurement price remained stable between EGP 8189/t and EGP 8323/t.

The amount of pelleted feed sold by surveyed businesses followed an 'inverted U' shaped curve between February and July, gradually climbing from 67 t in February, reaching its highest point in June (4805 t) before dropping in July (-2551 t) (Figure 5). Sales gradually fell between July and November from 2254 t to 1330 t, except for a jump to 2599 t in October. The average sales value for pelleted feed remained stable between March and November at around EGP 8700/t.

Figure 3. Total quantity (t) of pelleted feed sold, by month



Farmers

Almost all surveyed farmers were operational between February and November. Among those not operating, the inability to obtain credit to purchase inputs was cited as the main cause.

The share of farms procuring inputs rose from 26% in February to 100% in June and remained stable for the rest of the survey period. The total quantity of feed procured by farmers followed a bell-shaped curve, climbing gradually between February (38 t) and May (880 t) before rising sharply to 2205 t in June, before dropping to 929 t in August. In the subsequent months the feed procurement stayed stable before falling again to 378 t in November, similar to the pattern of sales reported by feed sellers. The increase in feed procurement from April to June can be attributed to rising temperatures, causing fish metabolism to increase, requiring more feed. Floating feed was the main feed purchased. The greatest quantity of fish seed was purchased during April (12.7 million pieces), mirroring the pattern of hatchling production, and the main stocking period at the beginning of the growing season. The number of seed purchased by farmers plummeted after April and continued to fall in the following months, with the lowest quantity procured in August (340 pieces), before rising marginally in September (770 pieces).

Farmed fish sales fluctuated over the survey period. Fish sales rose by more than ten times, from 40 t to 433 t between February and April, before falling back sharply in May (-313 t). Sales increased again in June to 323 t, falling again by 54% in August to 147 t. Sales trended upwards in September and jumped in October to 817 t, the greatest quantity of farmed fish sold in this time period, then plummeted by 76% to 197 t in November. The high fish sales in April can be attributed to Easter holiday, during which eating fish is tradition for Egyptian consumers. The average farmgate price received by farmers declined gradually, from EGP 26/kg in February to EGP 21/kg in July; a reduction of about 24%, remaining at this level thereafter. Tilapia accounted for the bulk of fish sold.

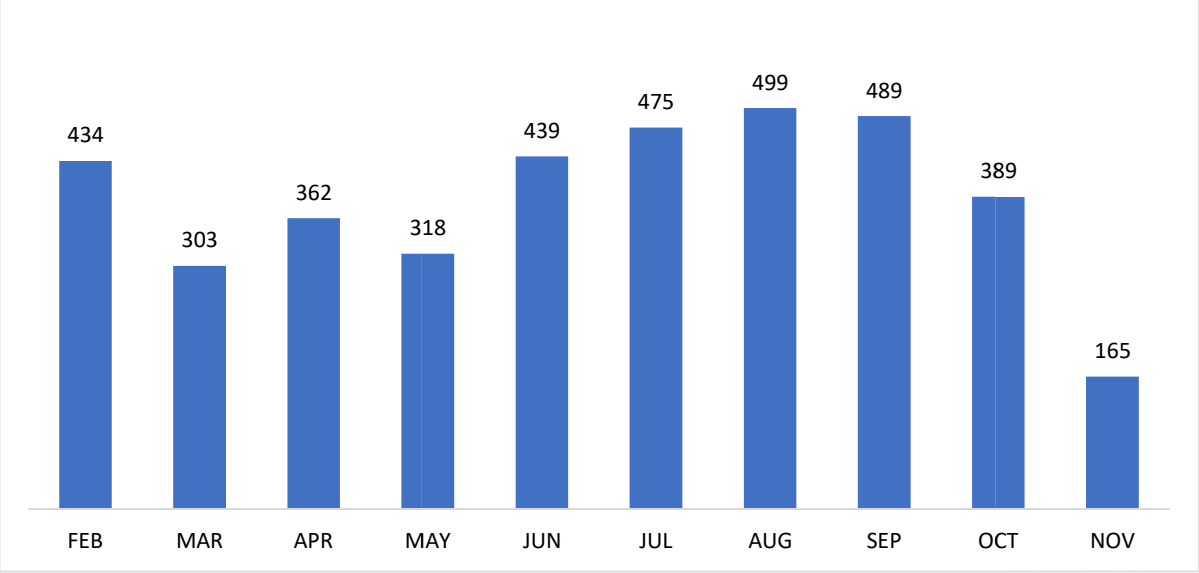
Traders

All surveyed fish traders were operational between February and November, while the number of days operated per month fell from a high of 27 days in February, to 15-21 days during May-November.

Farmed fish were traded throughout the entire survey period, while marine capture fish were only traded from May onwards. No respondents reported trading freshwater capture fish or shrimp. The total quantity of farmed fish sold by surveyed traders fluctuated somewhat from month to month and followed an 'inverted U shaped' curve between May and November (Figure 6). The lowest quantity sold was in March (303 t) and May (318 t), after which it gradually climbed to the highest quantity sold, in August (499 t) and September (489 t). After the quantity traded peaked in these months, sales fell in October and continued to fall to 165 t in November, a 62% decrease from February. In contrast, the total quantity of marine capture fish sold remained relatively stable, standing at 67 t in May and June, falling slightly to 51 t and 47 t in July and August, remaining stable until November, when sales dropped to only 18 t.

The average wholesale sales price of farmed fish declined steadily from EGP 27/kg in February to EGP 18/kg in July (which is about 20% lower than the normal market price at this time of year) before slightly rebounding to around EGP 21/kg in October and November. This amounts to a 50% drop in the price received by wholesalers over this six-month period. Tilapia accounted for most of the fish traded over this period.

Figure 6. Total quantity (t) of farmed fish sold by traders, by month



Retailers

Surveyed fish retailers went from being fully operational in February, to 25% and 19% not operating in March and April, respectively. Approximately 10% of retailers were in-operational from May-July and 21% halted operations in September. High prices and the inability for respondents to obtain credit to purchase inputs were cited as the main causes for halting operations. By October, all fish retailers resumed activities. The average number of days in which operational businesses traded fell from 17 days in February to 11 days in March and remained stable until November.

The total quantity of farmed fish sold by surveyed retailers followed similar pattern to farmed fish sold by traders. Between February and July, farmed fish sales declined from 20 t in February to 9.3 t in May, slowly rising back up to 17 t in November. Farmed fish sales increased slightly each month between July and November, a gradual rise of 4t over this period. In contrast the total quantity of marine capture fish sold by retailers remained stable at the low level of 2 t, between May and October, before increasing somewhat to 3 t in November.

The retail price of farmed tilapia followed the same pattern as fish sales, climbing slightly from EGP 25/kg in February to EGP 28/kg in April (for fish averaging 250 g in size), before falling steadily to EGP 24/kg in July (a drop of 19%). After this period of decline, the average sales price recovered, standing at EGP 27/kg in October. Surveyed retailer's income dropped by 53% between February and July, suggesting a decline in consumer purchasing power as the income of many people fell after the COVID-19 outbreak. However, retailers' incomes climbed quickly, thereafter to a total of EGP 404,950 in November; 42% more than July but 19% less than in February.

3. Recommendations

- Safeguard ability to access transportation and movement of merchandise.
- Keeping markets open in a safe way is key to safeguarding demand and keep the supply chain from functioning adequately.
- Conduct research on how COVID-19 may transfer through fish market practices and ways to mitigate this.
- Provide financial support to actors of supply chain who have lost substantial amounts of revenue and often report reduced access credit and poor cash flow as a key constraint to doing business.
- Support and encourage fish processing to utilize fish at times of lower prices, improve farmers' incomes and enable processed fish to reach wider market.
- Provide institutional support for fish farmers to export product to Middle East and Africa to improve the market and mitigate the impact of declining domestic purchasing power.
- Make greater use of digital marketing and ICT solutions to connect producers, marketing intermediaries and consumers.
- Reduce land rental fees for fish farmers who rent farmland from government to help lower production costs.

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