KAP Questionnaire_Fish Producer

Name of the enumerator

- ◯ Madhu Sudan Dey
- ◯ Debashish Dey Tarafder
- ◯ Md. Ali Hosen Bhuiya
- ◯ Md. Rashedul Islam
- ◯ Md. Nafiul Adedeen Nafi
- ◯ Rubel Ahmed
- ◯ Shad Man Shadi Jahin
- ◯ Nafiul Islam Rushad
- ◯ Sabysachi Goon
- ◯ Mofazzel Hossen
- ◯ Aniqa Sarwat Sadia
- ◯ Md. Saiful Islam
- ◯ Rakibul Islam
- ◯ Jannat Ara Ritu
- ◯ Shaila Sultana Sraboni
- ◯ Md. Farid Dewan

Survey date

yyyy-mm-dd

PART-I: SOCIO-DEMOGRAPHIC INFORMATION

1.1. Name of the fish farmer

1.2. Age
(In years)

1.3. Gender

- ◯ Male
- ◯ Female

1.4. Village/Area of residence

1.5. Upazila

- ◯ Trishal
- ◯ Muktagacha
- ◯ Durgapur
- ◯ Paba
- ◯ Adamdighi
- ◯ Kahaloo
- ◯ Manirampur
- ◯ Sharsha

1.6. District

- ◯ Mymensingh
- ◯ Rajshahi
- ◯ Bogura
- ◯ Jashore

1.7. Mobile number

_____

1.8. Education

- ◯ No education
- ◯ Can sign only
- ◯ Primary/Elementary
- ◯ S.S.C./Dakhil/Equivalent
- ◯ H.S.C./Alim/Equivalent
- ◯ Bachelor (Pass)
- ◯ Bachelor (Hons.)/Fazil/Equivalent
- ◯ Masters/Kamil/Equivalent
- ◯ Ph.D.
- ◯ Post-Doctorate
- ◯ Others

Please specify others

_____

1.9. Sub-occupation

- ☐ Agriculture (Own/Sharecropper)
- ☐ Fish farming
- ☐ Fishermen
- ☐ Poultry rearing/Business
- ☐ Livestock rearing/Business
- ☐ Service (Govt./Private/N.G.O.)
- ☐ Housewife
- ☐ Student
- ☐ Entrepreneur
- ☐ Labor (Agricultural/Non-agricultural)
- ☐ Business
- ☐ Professional (Doctor/Engineer/Lawyer)
- ☐ Driver/Rickshaw puller/Van puller
- ☐ Handicrafts/Carpenter/Potter
- ☐ No sub-occupation
- ☐ Others

Please specify others

_____

1.10. Family size (No.)

_____

1.11. Earning member (No.)

_____

1.12. No. of children

(Below 14 years old)

_____

1.13. Fish farming experience

(In years)

_____

1.14. Have you ever received any advice or service about fish farming?

- ◯ Yes
- ◯ No

How many times?
(Last 1 year)

_____

1.15. Have you received any training on safe fish farming?

- ◯ Yes
- ◯ No

What was the training duration?
(Days/months/year)

_____

PART-II: FARM'S INFORMATION

Number of ponds
(Owner and rented/leased)

_____

Size of the fish farm
(Decimal)

_____

What fish do you harvest in your pond(s)?

_____

PART-III: KNOWLEDGE ON SAFE FISH PRODUCTION

3.1. Do you know that eating contaminated/adulterated food can be transmitted diseases?

◯ Not at all ◯ Very little ◯ Somewhat ◯ A lot ◯ To a great extent

3.2. Do you know that eating fish that are produced in an unsafe environment can cause various diseases?

◯ Not at all ◯ Very little ◯ Somewhat ◯ A lot ◯ To a great extent

3.3. Is it known to you the appropriate stocking density of fingerlings per decimal?

Mixed culture: Carp type fish [Rui (6-8 inches), Mrigel (6-8 inches), Silver carp (3-5 inches), Common carp or Karfu (3-4 inches), Katla (4-6 inches), Grass Carp etc.]: 35-40, Tilapia (3-4 inch): 50-60, Pangas (6-8 inch): 30-35; Monoculture: Tilapia (3-4 inch): 100-150, Pangas (6-8 inch): 80-100. Stocking density can be doubled or higher if water changes, oxygen supply and improved feed are provided..

Not at all | Very little | Somewhat | A lot | To a great extent

3.4. Do you know what the pH level of pond water should be?

(pH is a scale from 1 to 14 that measures the acidity or alkalinity of water. The mid-value of the scale is 7 which represents the highest level of water purity. The lower the pH value of water, the more acidic the water is. On the other hand, the higher the pH value of water, the more alkaline the water is. The average pH of fish blood is 7.4, so the pH level of pond water should be kept between 6.5 and 8.5. If the pH value is not between 6.5 - 8.5, it weakens the fish's immune system, and the fish may die. If the pond water is mixed with dirty and unrefined material from outside or if there is an excess of algae and aquatic plants, the pH of the water rises, and the water alkalinity increases (here above 8.5). When the amount of oxygen in the water decreases or carbon dioxide increases, the pH of the water decreases (here below 6.5), and the acidity of the water increases. Again, having too many fish can cause this problem, as they release carbon dioxide, which exacerbates the problem.)

Not at all | Very little | Somewhat | A lot | To a great extent

3.5. Do you know the optimum values of water-quality parameters?

[Dissolved oxygen (> 4.0 mg/l), pH (6.5 – 8.5), Alkalinity (Minimum of 50 mg/l, but 100-400 mg/l is preferred), Ammonia (NH_3) < 0.15 mg/l, Nitrate (NO_3) < 50 mg/l, Nitrite (NO_2) < 0.5 mg/l, Hydrogen sulfide < 0.15 mg/l]

Not at all | Very little | Somewhat | A lot | To a great extent

3.6. Do you know when the pond water needs to be changed?

[1. High temperature (>32°C); 2. Low dissolved oxygen (<3.5 ppm AM, < 5 ppm PM); 3. High ammonia (TAN >0.25 mg/l) or pH above 9; 4. Transparency too low (<30cm); 5. Dark green or dark brown color]

Not at all | Very little | Somewhat | A lot | To a great extent

3.7. Do you know the sources that can deteriorate the pond water quality?

Not at all | Very little | Somewhat | A lot | To a great extent

What are the sources?

- [ ] Bathe in the pond
- [ ] Wash clothes
- [ ] Flow of dirty rainy water with sediments
- [ ] Mixture of dried leaves, cow dung, and stools
- [ ] Bathing cattle
- [ ] Washing pots and pans in pond water
- [ ] No removal or disposal of dead fish
- [ ] Others

Please specify others

_____

What are the sources?

- [ ] Bathe in the pond
- [ ] Wash clothes
- [ ] Flow of dirty rainy water with sediments
- [ ] Mixture of dried leaves, cow dung, and stools
- [ ] Bathing cattle
- [ ] Washing pots and pans in pond water
- [ ] No removal or disposal of dead fish
- [ ] Others

Please specify others

_____

What are the sources?

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- [ ] Bathing cattle
- [ ] Washing pots and pans in pond water
- [ ] No removal or disposal of dead fish
- [ ] Others

Please specify others

_____

What are the sources?

- [ ] Bathe in the pond
- [ ] Wash clothes
- [ ] Flow of dirty rainy water with sediments
- [ ] Mixture of dried leaves, cow dung, and stools
- [ ] Bathing cattle
- [ ] Washing pots and pans in pond water
- [ ] No removal or disposal of dead fish
- [ ] Others

Please specify others

_____

3.8. Do you know where the wastewater should not be released or discharged?

[1. Natural wetlands --- Polluting these areas through the release of wastewater that contains excessive organic materials and other contaminants, such as antibiotics, and disinfectants, results in eutrophication (plentiful growth of simple plant life, i.e., algae, plankton, etc.); 2. Freshwater and groundwater resources (Salt contained in the wastewater will make the freshwater unusable)]

Not at all Very little Somewhat A lot To a great extent

3.9. Do you know what ingredients fish feed is made of?

(Fish meal, meat meal, meat and bone meal, soybean meal, mustered oil cake, rice bran, wheat bran, maize, flour, salt, vitamin, mineral, etc.)

Not at all Very little Somewhat A lot To a great extent

3.10. Do you know the required protein percentage in feed for each fish variety?

[Tilapia --- Starter: 27-28%, Grower: 25%, Finisher: 24%; Pangasius --- Starter: 28-30%, Grower: 25%, Finisher: 24%; Carp (i.e., Rohu) --- Starter: 24-26%, Grower: 22%, Finisher: 21%]

Not at all Very little Somewhat A lot To a great extent

3.11. Do you know what ingredients are not allowed to use in fish feed?

(Any harmful chemicals including antibiotic, growth hormone, steroid and insecticides cannot be used in fish feed and animal feed)

Not at all Very little Somewhat A lot To a great extent

3.12. What is wrong with excessive feeding?

[Feeding practices (how much, how often, and at what time during the day) depend on cultured species, the life stage (starting, growing & finishing) and age of the cultured fish, water quality parameters, and weather conditions. Feeds contain many nutrients and, when left uneaten, will end up at the bottom of the pond and start decomposing. When these nutrients are dissolved into the water column, they act very similarly to fertilizers. This decomposition process requires oxygen, making less oxygen available for the fish and increasing the ammonia level.]

Not at all Very little Somewhat A lot To a great extent

3.13. What do you know about the use of growth promoters in fish farming?

(Growth promoters are used in aquaculture to improve fish's growth, increase disease resistance, and improve water quality, which in turn, increases production and profitability.)

Not at all Very little Somewhat A lot To a great extent

3.14. Do you know the types of growth promoters used in fish production?

(Essential fatty acid, antibiotics, probiotics, hormones, yeast, enzymes, mushrooms, etc.)

Not at all Very little Somewhat A lot To a great extent

3.15. Is it harmful to human health to use excessive growth hormones?

(The use of hormones in fish farming can have harmful consequences for human and environmental health. Exposure to hormones can cause endocrine disorders, such as early puberty in children, negative repercussions on growth, modification of sexual characteristics, and cancer development.).

Not at all | Very little | Somewhat | A lot | To a great extent

3.16. Are there any potential health risks associated with the excessive use of antibiotics in fish farming?

Not at all | Very little | Somewhat | A lot | To a great extent

3.17. Do you know that the fish we buy from the market contains more than acceptable levels of various heavy metals?

Not at all | Very little | Somewhat | A lot | To a great extent

3.18. Do you know how cross-contamination occurs in aquaculture?

[Cross-contamination is the process by which bacteria or other microorganisms are unintentionally transferred from one substance or object to another, with harmful effects. Contaminants and pathogens can originate from employees and be transferred to the fish, but they can also come from farm wastes, contaminated water, dirty tools, equipment, and facilities that are kept in unhygienic conditions. Incoming water is often infected with contaminants and pathogens that could also harm fish stock and consumers. Common feed contaminants include veterinary drug residues, heavy metals (like mercury and lead), cleaning and pest control chemicals, and toxins such as mycotoxins.]

Not at all | Very little | Somewhat | A lot | To a great extent

3.19. How much do you know about the way to preserve fish feed?

(Feed should be stored properly on an elevated space with sufficient ventilation. The space should be a cool and dry place. Remove and dispose of feed immediately if moisture, mold, or rancidity is detected. Reject any feed with evidence of moisture or mold from the seller.)

Not at all | Very little | Somewhat | A lot | To a great extent

3.20. Why is ventilation important for the storage of feeds?

[One of the main reasons for declining feed quality during storage is insufficient ventilation. This results in the growth of fungi and molds. Some of these molds produce toxic substances called mycotoxins. These mycotoxins harm the well-being of fish, stun their growth, and can cause mass mortality.]

Not at all | Very little | Somewhat | A lot | To a great extent

3.21. How much do you know about the difference between cleaning and sanitation?

[Cleaning refers to removing dirt, soil, product scraps, blood, and grease from all surfaces of the facilities, equipment, and tools used on the farm. Sanitizing is the killing of bacteria and other pathogens with the use of dedicated chemicals.]

Not at all | Very little | Somewhat | A lot | To a great extent

3.22. Do you know that put on appropriate protective clothing (e.g., apron, gloves and boots) is crucial during aquaculture activities to reduce the threat of disease contamination?

Not at all | Very little | Somewhat | A lot | To a great extent

3.23. Do you know that frequent washing of fish-producing equipment is essential?

Not at all | Very little | Somewhat | A lot | To a great extent

3.24. What are the proper cleaning and sanitation procedures of equipment and tools used in aquaculture?

[1. Before starting any cleaning and sanitation activity, put on appropriate protective clothing; 2. Prepare cleaning tools (e.g., brooms, scrubbing brushes, shovels, water hoses, cleaning cloth, buckets, detergents, sanitizers, etc.); 3. Dismantle any processing equipment to clean it well; 4. Removing and wiping visible loose dirt on equipment surfaces; 5. Rinse all surfaces of materials and equipment with clean water, 6. Use detergent and scrub well with a scrubbing brush to remove grease and stains; 7. Rinse off the detergent from the top down with plenty of clean water; 8. Apply sanitizer to kill bacteria or reduce to safe levels and rinse with clean water; 9. Dry the equipment by removing excess water]

Not at all | Very little | Somewhat | A lot | To a great extent

3.25. Do you know it is essential to wash hands with soap after aquaculture activities, after using the toilet, after eating, and whenever necessary?

Not at all | Very little | Somewhat | A lot | To a great extent

3.26. Is it crucial to properly manage garbage, carcasses, and waste to produce safe fish?

Not at all | Very little | Somewhat | A lot | To a great extent

3.27. Why is it important to avoid farm activities if you have diseases (diarrhea, dysentery, cholera, etc.) or open wounds?

(To avoid transmission of pathogens, seriously ill personnel should not be allowed onto the farm. Wounds should be covered at all times with clean waterproof bandages. A person who has an open wound could transfer bacteria from this wound onto the harvested fish and passed to consumers.)

Not at all | Very little | Somewhat | A lot | To a great extent

3.28. Considering the health risks, do you know everyone should consume safe fish even if they cost a little more?

Not at all | Very little | Somewhat | A lot | To a great extent

PART-IV: ATTITUDES TOWARD SAFE FISH PRODUCTION

Please express your opinion for the following statements.

Statements	Strongly disagree	Disagree	Neutral/Undecided	Agree	Strongly agree
4.1. Eating adulterated food can lead to disease transmission.	○	○	○	○	○
4.2. Consumption of fish that are produced in an unsafe environment can cause various diseases.	○	○	○	○	○

4.3. Knowledge of safe fish production is beneficial for both the producers and consumers.	○	○	○	○	○
4.4. Drying and liming in between production cycles is crucial to disinfect the pond bottom and to control pests.	○	○	○	○	○
4.5. Inappropriate stocking density per decimal directly affects the growth and survival capacity and hence the production. Do you agree?	○	○	○	○	○
4.6. Eating fish produced in contaminated water can cause disease.	○	○	○	○	○
4.7. Water quality should be checked frequently.	○	○	○	○	○
4.8. External sources that could contaminate water and degrade quality should be properly monitored.	○	○	○	○	○
4.9. Regular wastewater disposal is essential for safe fish production.	○	○	○	○	○
4.10. Fish producers should not use such types of feed and feed additives that contain unsafe levels of biological, chemical, and physical contaminants or other adulterated substances.	○	○	○	○	○
4.11. Fish feed should be stored in a cool, dry, and elevated place from earth with enough ventilation facility.	○	○	○	○	○
4.12. Any pesticides, antibiotics, and hormones prohibited by the government should not be used in fish farming.	○	○	○	○	○
4.13. It is harmful to human health to use excessive growth hormones.	○	○	○	○	○
4.14. The use of antibiotics in fish farming has a potential health risk to humans.	○	○	○	○	○
4.15. Heavy metals in fish more than the recommended levels can cause various health problems in the future.	○	○	○	○	○
4.16. Do you agree that unhygienic practices during fish production are the source of cross-contamination?	○	○	○	○	○
4.17. Do you agree that you can minimize the risk of cross-contamination by following some hygiene practices?	○	○	○	○	○
4.18. Farm and surrounding should be kept clean and hygienic.	○	○	○	○	○
4.19. Frequent washing of fish-producing equipment is essential.	○	○	○	○	○

4.20. Only clean water should be used for cleaning and sanitizing.	○	○	○	○	○
4.21. It is essential to wash hands with soap after aquaculture activities, using the toilet, eating, and whenever necessary.	○	○	○	○	○
4.22. Protective cloths (e.g., apron, gloves, and boots) are crucial during aquaculture activities to reduce the threat of disease contamination.	○	○	○	○	○
4.23. It is crucial to properly manage garbage, carcasses, and waste to produce safe fish.	○	○	○	○	○
4.24. It is important to avoid farm activities if you have diseases (diarrhea, dysentery, cholera, etc.) or open wounds.	○	○	○	○	○
4.25. Consumers will prefer fish more if produced in a safer environment. Do you agree?	○	○	○	○	○
4.26. Do you agree that the consumers will pay a higher price for the safer fish?	○	○	○	○	○
4.27. If there is profit potential and adequate support to create specific consumer groups, you are willing to produce safe fish and sell it to consumers.	○	○	○	○	○
4.28. It is important to receive training on how to cultivate fish in accordance with health regulations.	○	○	○	○	○
4.29. You are interested in training in your spare time.	○	○	○	○	○
4.30. You will change your fish production and handling practices when you know they were incorrect.	○	○	○	○	○

PART-V: PRACTICES ON SAFE FISH PRODUCTION

Questions	Never	Rarely	Sometimes	Very often	Always
5.1. Prior to fingerlings stocking, do you dry the bottom of the pond properly and apply lime to disinfect and pest control?	○	○	○	○	○
5.2. Do you follow the recommended stocking density to release the fingerlings?	○	○	○	○	○
5.3. Do you frequently check the quality of pond water?	○	○	○	○	○
5.4. Do you change the pond water if its quality degrades?	○	○	○	○	○

5.5. Do you strictly monitor and control the external sources that could contaminate water and degrade quality?	○	○	○	○	○
5.6. Do you release or discharge the wastewater at the proper place?	○	○	○	○	○

5.7. From whom do you purchase the fish feed?

- ☐ Dealer
- ☐ Distributor
- ☐ Retailer
- ☐ Others

Specify others

_____

5.8. Do you receive any suggestions from feed sellers or dealers regarding fish production?

○ Never ○ Rarely ○ Sometimes ○ Very often ○ Always

Questions	Never	Rarely	Sometimes	Very often	Always
5.9. Do you purchase feed according to the required protein percentage for each fish variety?	○	○	○	○	○
5.10. Do you check the expiry date before purchasing the fish feed item?	○	○	○	○	○
5.11. Do you store fish feed in a dry, cool, and elevated place with adequate ventilation?	○	○	○	○	○

5.12. Do you use any feed additives or growth promoters with the fish feed?

○ Never ○ Rarely ○ Sometimes ○ Very often ○ Always

5.13. Do you use antibiotics in aquaculture to treat diseases caused by bacteria?

○ Never ○ Rarely ○ Sometimes ○ Very often ○ Always

5.14. Do you use medicine or drugs with the consultation of an experienced physician to treat the fish?

○ Never ○ Rarely ○ Sometimes ○ Very often ○ Always

5.15. Do you wear protective clothes like a face mask, hand gloves, apron, etc., while spreading chemical pesticides or applying feed to the pond?

Never Rarely Sometimes Very often Always

5.16. Do you clean and sanitize your hands after feeding or handling the fish?

Never Rarely Sometimes Very often Always

5.17. Do you wash fish-producing equipment frequently?

Never Rarely Sometimes Very often Always

5.18. Do you properly manage garbage, carcasses, and waste to keep the environment pollution-free?

Never Rarely Sometimes Very often Always

5.19. Do you avoid farm activities if you have diseases like diarrhea, dysentery, cholera, etc., or any wounds?

Never Rarely Sometimes Very often Always

5.20. Have you ever gotten sick from eating fish from your pond?

Never Rarely Sometimes Very often Always

5.21. What are the barriers do you think if you want to produce safe fish?

- [ ] Supply of safe feed from feed industry
- [ ] High costs of production
- [ ] Might prolong time to reach at the desired size and weight
- [ ] Difficulty to explain the practices followed and thus motivate the consumers to purchase
- [ ] Higher price might discourage lower income group to purchase
- [ ] Uncertainty to sell to production volume
- [ ] Certification or labeling of safety attributes
- [ ] Particular sales point or consumer market might be needed initially
- [ ] Others

Please specify others

Who decides what and how different aquaculture activities will be performed?

- ◯ Wife
- ◯ Husband
- ◯ Both

What of the following responsibilities does your wife (or, husband) perform?

(If the respondent is male, then what of the mentioned activities is performed by the female, and vice-versa)

- ☐ Pond preparation
- ☐ Fish stocking
- ☐ Water quality (pH level, oxygen & nitrogen level, etc.) check & measurement
- ☐ Monitor and control external sources
- ☐ Home made feed preparation
- ☐ Feed purchase
- ☐ Feed and aqua-medicine application
- ☐ Feed storage
- ☐ Cleaning and sanitize fish-producing equipments
- ☐ Manage garbage and wastewater disposal
- ☐ Fish selling at farmgate
- ☐ Fish harvesting
- ☐ Others

Please specify

_____

How often do your wife (husband) perform these activities?

(If the respondent is male, then how often the mentioned activities is performed by the female, and vice-versa)

Never — Rarely — Sometimes — Very often — Always

At this phase of interview, do you feel free to share your average monthly income?

- ◯ Yes
- ◯ No

What is your average monthly income?

(Tk.)

- Tk. 0 - 10,000
- Tk. 10001 - 20,000
- Tk. 20,001 - 40,000
- Tk. 40,001 - 60,000
- Tk. 60,001 - 80,000
- Tk. 80,000 plus

Capture the location of the housing unit.

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)

THANK YOU FOR YOUR PRECIOUS TIME AND COOPERATION