Shrimp and Prawn Farms Questionnaire – Final Version 6th October 2017

Developed for Digital Network for Aquaculture

**Consent**

**[On a page before the questions start]**

Thank you for agreeing to participate in this survey on disease management and aquaculture conducted by the University of Exeter, CEFAS (UK), Worldfish, and ARBAN (Bangladesh).

The information you provide will be stored securely and used for research purposes only. Your participation in the study is entirely voluntary, and it will not be possible for people outside the research team to identify you or your farm from your individual responses.

**Questionnaire**

1. **Farmer: Location and Identification**
2. Farmer’s Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Farmer’s Mobile No. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. District \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Upazila \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Union \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Village \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. Age \_\_\_\_\_\_
9. Sex \_\_\_\_\_\_
10. Education level \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *Researcher’s instruction* [Input highest level attained,
11. How many years have you farmed shrimp/prawn? \_\_\_\_\_\_ Years for example Class 1-12, or degree/masters level]
12. Is this farm:
    1. Your own (bought yourself)? [tick]
    2. Inherited? [tick]
    3. Rented from landlord? [tick]
    4. Leased out? [tick]
    5. Shared ownership? [tick]

(between how many?) [\_\_\_\_\_\_\_\_\_]

1. Who is involved in the day-to-day running of the farm?
   1. Farmer [tick]
   2. Farmer’s wife/husband [tick]
   3. Extended family [tick]
   4. Hired labourer [tick]
2. **Farm characteristics**

*Programming Instructions*

1. What kind of farm do you operate (tick one)? [Connect classifications to applicable questions across the relevant
   1. Bagda (shrimp) only [tick] sections]
   2. Golda (prawn) only [tick]
   3. Golda and bagda [tick]
   4. Rice and bagda
      1. concurrent [tick]
      2. alternate [tick]
   5. Rice and golda
      1. concurrent [tick]
      2. alternate [tick]
   6. Rice, golda and bagda
      1. concurrent [tick]
      2. alternate [tick]
2. Do you also stock finfish?
   1. Indian carps [tick]
   2. Chinese carps [tick]
   3. Tilapia [tick]
   4. Other [tick]

(please specify) [\_\_\_\_\_\_\_\_\_]

1. What is the size of your *gher*?
   1. No. of ponds/ghers \_\_\_\_\_\_ *Researcher’s Instructions*
   2. Average water depth of sample pond) \_\_\_\_\_\_ feet [If farmer has multiple ponds/ghers, enter information for the selected pond]
   3. Water surface area of sample pond \_\_\_\_\_\_ decimal
   4. Dike area of sample pond \_\_\_\_\_\_ decimal
   5. Canal water depth of sample pond \_\_\_\_\_\_ feet *Programming Instructions*

[Only applicable if mixed system]

1. What are your main sources of water? *Programming Instructions*

[Programme app to allow maximum two options]

* 1. Tidal [tick]
  2. River [tick]
  3. Canal [tick]
  4. Neighbour’s farm [tick]
  5. Rainfall [tick]
  6. Pumped ground water [tick]
  7. Side gher [tick]

1. Is your farm:
   1. Part of an aquaculture development programme? [tick]  
      (please specify) [\_\_\_\_\_\_\_\_\_]
   2. Certified organic? [tick]
   3. Part of an accreditation scheme? [tick]
   4. Producing for a designated buyer/exporter? [tick]
   5. None of the above [tick]
2. **Stocking**

* 1. What quantities do you stock on your farm?

1. Bagda (shrimp) [\_\_\_\_\_\_\_\_\_]
2. Golda (prawn) [\_\_\_\_\_\_\_\_\_]
3. Indian carp [\_\_\_\_\_\_\_\_\_] *Researcher’s instructions*

Weight [\_\_\_\_\_\_\_\_\_] kg [Input a value of 0 if the farmer

1. Chinese carp [\_\_\_\_\_\_\_\_\_] does not stock a particular species]

Weight [\_\_\_\_\_\_\_\_\_] kg

1. Tilapia [\_\_\_\_\_\_\_\_\_]

Weight [\_\_\_\_\_\_\_\_\_] kg

1. Other finfish [\_\_\_\_\_\_\_\_\_]

Weight [\_\_\_\_\_\_\_\_\_] kg

* 1. How many times do you stock in a cycle?

1. Bagda [\_\_\_\_\_\_] times
2. Golda [\_\_\_\_\_\_] times
3. Finfish [\_\_\_\_\_\_] times
   1. Where do you source your PL? *Researcher’s instructions*
4. SPF bagda hatchery [tick] [Tick all that apply]
5. PCR-tested bagda hatchery [tick]
6. Organic bagda [tick]
7. Bagda nursery [tick]
8. Untested bagda hatchery [tick]
9. Wild bagda [tick]
10. Golda hatchery [tick]
11. Golda nursery [tick]
12. Wild golda [tick]
    1. What is you preferred source of shrimp and/or prawn PL? *Researcher’s instructions*
13. SPF bagda hatchery [tick] [If mixed tick all;
14. PCR-tested bagda hatchery [tick] If bagda only, tick a-e;
15. Bagda nursery [tick] if golda only, tick f-h]
16. Untested bagda hatchery [tick]
17. Wild bagda [tick]
18. Organic bagda [tick]
19. Golda hatchery [tick]
20. Golda nursery [tick]
21. Wild golda [tick]
    1. Can you regularly get your preferred source? Yes/No *Programming instructions*

[If answer yes, skip the next two questions and go

directly to question 3.7]

* 1. If you answered no, is your preference: *Programming instructions*

1. Too expensive? [tick] [Answer this question if answered no to 3.5]
2. Not available? [tick]
3. Available but poor quality? [tick]
4. Available but untrusted source? [tick]
   1. How do you pay for your shrimp and/or prawn PL?
5. Cash [tick]
6. Credit [tick]
7. Loan
   1. Personal/bank loan [tick]
   2. Neighbours/relatives [tick]
8. **Production**

1. How much did you produce in the last year? (Kg) *Researcher’s Instructions*
2. Bagda [\_\_\_\_\_\_] kg [If mixed tick all;

Average body weight at harvest [\_\_\_\_\_\_] g If bagda only, tick a-e;

1. Golda [\_\_\_\_\_\_] kg if golda only, tick f-h]

Average body weight at harvest [\_\_\_\_\_\_] g

1. Indian carp [\_\_\_\_\_\_] kg [Follow up the question by asking farmers the

Average body weight at harvest [\_\_\_\_\_\_] g average body weight of crop at harvest]

1. Chinese carp (silver carp, grass carp) [\_\_\_\_\_\_] kg

Average body weight at harvest [\_\_\_\_\_\_] g [Input a value of 0 if the farmer

1. Tilapia [\_\_\_\_\_\_] kg does not stock a particular species]

Average body weight at harvest [\_\_\_\_\_\_] g

1. Other finfish [\_\_\_\_\_\_] kg

Average body weight at harvest [\_\_\_\_\_\_] g

1. **Animal health problems**

*Programming instructions*

1. Bagda [*Answer if ticked 2.1a*]
2. No problems [tick]
3. White spot [tick]
4. Cotton shrimp [tick]
5. Fungal disease [tick]
6. Gill swelling [tick]
7. Reddish discoloration [tick]
8. Slow growth syndrome [tick]
9. Spongy disease [tick]
10. Tail rot [tick]
11. Unknown disease [tick]
12. Identified Disease *Researcher’s Instructions*

(please specify) [\_\_\_\_\_\_\_\_\_] [*From pictures and descriptions*]

1. Golda *Programming instructions*
2. No problems [tick] [*Answer if ticked 2.1b*]
3. Antenna & or Rostrum rotting [tick]
4. Belly reddening [tick]
5. Broken antenna/antennae & rostrum [tick]
6. Curved rostrum [tick]
7. Dhari jhara [tick]
8. Shadla pora [tick]
9. Shuga or sponge rog [tick]
10. Soft shell [tick]
11. Sudden die off [tick]
12. Tail rot [tick]
13. Unknown disease [tick]
14. Identified Disease Researcher’s Instructions

(please specify) [\_\_\_\_\_\_\_\_\_] [*From pictures and descriptions*]

1. What was the percentage of stock mortality last cycle?
2. No mortality [tick]
3. <10% mortality [tick]
4. 11-50% mortality [tick]
5. 51-80% mortality [tick]
6. >80% mortality [tick]
7. What other risks does your crop face besides disease?
8. Flooding/cyclone [tick]
9. Theft of stock [tick]
10. Other [tick] *Programming Instructions*

(please specify) [\_\_\_\_\_\_\_\_\_\_\_\_] [Programme app to allow max. no. of characters (2 to 3 words).]

1. No problems [tick]
2. **Water problems and water management** *Researcher’s Instructions*

[Tick all that apply]

1. What water problems do you experience?
2. Temperature too high [tick]
3. Temperature too low [tick]
4. Rapid changes in temperature [tick]
5. Water too salty [tick]
6. Water not salty enough [tick]
7. Rapid changes in salinity [tick]
8. Water depth too low [tick]
9. Flooding of gher [tick]
10. Rapid Fluctuations in depth [tick]
11. Access to water is difficult [tick]
12. Other [tick] *Programming Instructions*

(please specify) [\_\_\_\_\_\_\_\_\_\_\_\_] [Programme app to allow max. no. of characters (2 to 3 words).]

1. How often do you change/add the water in your farm? *Programming Instructions*

[tick]

1. Daily [tick] If tick e and f go to question 6.4]
2. Weekly [tick]
3. Every 15 days [tick]
4. Monthly [tick]
5. Less frequently (e.g. once a year) [tick]
6. Never
7. What percentage of water was changed in your last production cycle?

[\_\_\_\_\_] %

1. Why don’t you change your water more frequently? *Programming Instructions*
   1. I change my water frequently [tick]
   2. No discharging area [tick] [Skip question if ticked 6.2 a, b or c]
   3. No discharging facilities [tick]
   4. Too expensive [tick]
   5. Don’t know how [tick]
   6. No disease problems [tick]
   7. Other [tick]

(please specify) [\_\_\_\_\_\_\_\_\_\_\_\_]

1. **Treatments**
2. Whattype of feed do you use? (% used)
3. None [\_\_\_\_\_\_\_\_] %
4. Own food [\_\_\_\_\_\_\_\_] %
5. Own pellet [\_\_\_\_\_\_\_\_] %
6. Commercial Pellet [\_\_\_\_\_\_\_\_] %
7. Floating Feed [\_\_\_\_\_\_\_\_] %
8. Compost/dung [\_\_\_\_\_\_\_\_] %
9. What treatments did you apply to this pond before stocking? *Researcher’s Instructions*
10. No treatment [tick] [Ask farmer for packet weight
11. Lime treatment [tick] take photographs of packets if available]

How many packets? [\_\_\_\_\_\_\_\_]

1. Pesticides/insecticides [tick]

How many packets? [\_\_\_\_\_\_\_\_]

1. Piscicides [tick]

How many packets? [\_\_\_\_\_\_\_\_]

1. Disinfectants [tick]

How many packets? [\_\_\_\_\_\_\_\_]

1. Ammonium sulphate [tick]

How many packets? [\_\_\_\_\_\_\_\_]

1. Other [tick]

Give details [\_\_\_\_\_\_\_\_]

1. What treatments have you applied this production cycle *Researcher’s Instructions*
2. Salt [tick] [Take photographs of packets if available
3. Lime [tick] PROMPT with ‘is that all?’]
4. Organic fertilizer [tick]
5. Inorganic fertilizer [tick]
6. pH treatment [tick]
7. Oxygenation [tick]
8. Commercial disinfectant [tick]
9. Probiotics [tick]
10. Antibiotics [tick]
11. No treatments

1. Name any medicines that you have used? *Programming Instructions*
2. Oxytetracycline [tick] [if 7.2.j is checked, skip to question 8]
3. Ciprofloxacin [tick]
4. Chloramphenicol [tick] *Researcher’s Instructions*
5. Florfenicol [tick] [If farmer does not know the name, take photo of packets]
6. Oxycycline [tick]
7. Erythromycin [tick]
8. Other [tick]

[Please specify brand]

1. None [tick]
2. Which species required medicine? *Programming Instructions*
   1. Bagda [tick]
   2. Golda [tick]
   3. Finfish [tick]
3. How many times did you apply medicine during this production cycle?
4. 1-5 times [tick]
5. 6-10 times [tick]
6. More than 10 times [tick]
7. Were the medicines effective at reducing mortality? *Programming Instructions*
8. No (>75% mortality) [tick] [Only answer if ticked 7.3.h above]
9. Partially (25-75% mortality) [tick]
10. Fully (<25% mortality) [tick]
11. **Who do you go to for advice on animal health, disease management, pond management etc.**
12. Farm supply shop [tick]
13. Lead farmer [tick]
14. Neighbouring farmers [tick]
15. Extension worker [tick]
16. Government fisheries officer [tick]
17. NGO [tick]
18. Other [tick]

(please specify) [\_\_\_\_\_\_\_\_\_\_\_\_]

1. **What amount of your costs go on:**
2. Feed [\_\_\_\_] %
3. Medicines [\_\_\_\_] %
4. Inputs (disinfectants etc.) [\_\_\_\_] %
5. PL [\_\_\_\_] %
6. Water management [\_\_\_\_] %
7. Hired labour [\_\_\_\_] %
8. Land rental [\_\_\_\_] %
9. Other [\_\_\_\_] %

(please specify) [\_\_\_\_\_\_\_\_\_\_\_\_]

1. **What was the reason for your last harvest?**
2. Reached market size [tick]
3. Market price was good [tick]
4. Disease outbreak [tick]
5. Needed cash [tick]
6. Other [tick]

(please specify) [\_\_\_\_\_\_\_\_\_\_\_\_]

1. **How much of income do you get from:**
2. Shrimp or prawn aquaculture? [\_\_\_\_] %
3. Finfish [\_\_\_\_] %
4. Agriculture/rice [\_\_\_\_] %
5. Day labouring [\_\_\_\_] %
6. Rents [\_\_\_\_] %
7. Credit repayments [\_\_\_\_] %
8. Other [\_\_\_\_] %

[Please specify] [\_\_\_\_\_\_\_\_\_\_\_\_]

1. **What proportion of your income is reinvested in the farm year on year?**

[\_\_\_\_] %

1. **How do you support yourself and your family if your shrimp/prawn crop fails?**
2. Finfish [tick]
3. Agriculture/rice [tick]
4. Livestock [tick]
5. Service [tick]
6. Business [tick]
7. Borrow cash [tick]
8. Extended family [tick]
9. Day labouring [tick]
10. Other [tick]

(please specify) [\_\_\_\_\_\_\_\_\_\_\_\_]

1. **Picture of farmer with pond**
2. **GPS positioning**