Supplementary questions for field (topic 1-3 – ask 10% sample of farmers, topics 3-6 desk based, expert interviews, talk to farmers openly).

**Topic 1: Credit and farm pressures**

Credit

Rationale

* To understand how access to credit, including repayment schedules and interest rates, modifies farming practices
* Repayment schedules and whether/how they align with farmer schedules
* Providers of in-kind loans Eg nurseries, hatcheries, faria, feed dealers and so forth
* How access to credit changes farming practices, eg would it change cropping patterns and schedules? Would farmers be able to invest in better quality seed, feed, inputs or upgrade their farming systems?
* How access to credit *reduces* high risk practices (eg likelihood of antibiotic use)
* How access to credit *increases* high risk practices (eg likelihood of antibiotic use)
* How access to credit could be improved, eg access to low interest, low risk loans

1. Do you have access to credit?

Yes, go to (2)

No, go to (5)

1. What sources of credit are available to you? (examples: informal such as dadon, family, neighbours; NGO microfinance schemes; public and private banks).

Do you access credit in cash, in-kind or both?

1. *If cash*

Which is your preferred lender and why?

Which lender do you use and why?

What do you access credit for? (examples: to purchase seed; production costs; purchase hardware; to cover labour costs or cost of land rentals)

What rates of interest does your lender charge?

What is your repayment schedule?

Do you have difficulties meeting your repayment schedule? If yes, explain these difficulties.

How has access to credit changed the way that you farm? (examples: adjust cropping patterns, buy better quality inputs, invest in improvements or premium quality seed)

1. *If in-kind*

What in-kind credit do you have access to?

Which lender do you prefer and why?

Which lender do you use and why?

What rates of interest does your lender charge?

What is your repayment schedule?

Do you have difficulties meeting your repayment schedule? If yes, explain these difficulties.

Do you choose which kind or brand of seed/feed/inputs you can borrow? Or does the lender decide what you get? [brands that they wish to promote]

How has access to credit changed the way that you farm? (examples: adjust cropping patterns, buy better quality inputs, invest in improvements or premium quality seed)

1. *No*

Would access to credit improve the security of your farming?

If you had access to credit, how would this change your farming practices (examples: adjust cropping patterns, buy better quality inputs, invest in improvements or premium quality seed)

1. *General Questions*

How could access to credit be improved?

How would this improve your farming business?

**Topic 2: Golda stocking and Bagda Mortality**

In the survey there was a significant relationship between Bagda mortality and golda stocking frequency.

Questions:

Do farmers increase golda stocking as a response to observed mortality in bagda?

(if no, then we can assume that golda stocking contributes to higher risk of bagda mortality)

**Topic 3: Ratio of PL types used**

For the farms visited, can we have an estimate of the numbers of PL used from each source (e.g. a farmer stocks 10000PL, with 5000 SPF, 3000 tested, and 2000 untested).

**Topic 4: Pre-fertiliser uses, white spot and reddish discolouration**

White spot and reddish discolouration detection are positively related to application of pre-fertisliers (urea and TSP). What might be the relationship between fertiliser use and disease detection?

**Meezan:** Fertilisation play an important role in algal growth, bacteria concentration and water quality. The observed positive relationship of pre-fertiliser application and reported disease incidence (white spot and reddish discolouration) might indicate increased awareness of farmers. These farmers practised relatively improved pre-stocking preparation, paid higher expenses (cost of fertilization). Any direct relationship between pre-stocking and disease occurrence due to pathogen, stress might be worthy to investigate.

**Topic 5: Canal depth and golda disease**

Farms with deeper canals had higher probability of golda disease detection. Can we find a reason for this apparent anomaly?

**Meezan:** Prawn (*Macrobrachium rosenbergii*) are bottom dweller. Deeper canals have higher probability of longer period water availability (might intended for year around) intended to culture prawn/fish for longer period including dry season. Proper canal bottom management for example sludge removal, dry before stocking are required for year round prawn production. Improper canal bottom management, higher organic load resulting water quality deterioration might explain higher golda disease detection.

**Topic 6: Feed and antibiotics**

Can we investigate the suspicion that commercial feeds contain compounds that may have antibacterial properties?

**Meezan:** There are reports on antibiotic contamination in feed. Fish feed business are highly competitive including companies with international, national, local and homemade service. Commercial companies might mix antibiotic with feed to demonstrate improved feed performance, increased sales, sales promotion during disease outbreak (particularly warmer period) and storage for longer period. Antibiotic mixed with feed is a common disease treatment procedure in the grow-out farms. So, it will be worthy to investigate commercial feeds for compounds with antibacterial properties.