**Accelerating Aquaculture Development in Ghana through Sustainable Nile Tilapia Seed Production and Dissemination**

**ROUGH DRAFT 4 (as of April 23 2019)**

# [This questionnaire is being programmed into tablet-based CAPI]

# [READ CONSENT FORM]

# MODULE I. HOUSEHOLD-LEVEL QUESTIONNAIRE

***[Enum: To be administered to respondents who are most knowledgeable about tilapia production based on the listing of tilapia farming households by FC; the main respondent can seek data/information/record from other members of households (or staff or caretaker of the farm) who are also knowledgeable about tilapia farming]***

# SECTION A. HOUSEHOLD IDENTIFICATION

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Questions to be answered by enumerator** | | | **Answer** | **Codes** |
| A1. Region | | |  | See codes |
| A2. District | | |  | See codes |
| A3. Community | | |  | See codes |
| A4. GPS coordinates of farm | | |  |  |
| A5. Respondent’s response status | | |  | |  | | --- | | **STATUS CODE**  01 = Completed/Successful (CONTINUE)  02 = Entire household absent outside the area for extended period of time (END INTERVIEW)  03 = Refused (in general) (END INTERVIEW)  04 = Refused to consent (END INTERVIEW)  05 = Postponed (RETURN FOR CALL-BACK)  06 = No household member at home or no competent respondent at home at time of visit (RETURN FOR CALL-BACK)  07 = Partial (RETURN FOR CALL-BACK)  77 = Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| **A6. Who were interviewed?** | | |  | Alone ......................................................... ……..1  With other staff present .......................... ……..2  With other household members present ............................. ……..3  With other staff and household members present ..................... ……..4 |
| A7. Name of Enumerator: | |  |  | / / 2019 |
| A8. Start time of Interview: | |  | A9. End time of Interview: |  |
|  | | | | |
| Questionnaire checked by supervisor: |  | | Name of supervisor: |  |

# SECTION B. RESPONDENT’S PROFILE

|  |  |  |
| --- | --- | --- |
| **Questions** | **Answer** | **Code** |
| B1. Name of farm/firm (if any) |  |  |
| B2. How far is the farm/firm to the respondent’s home? (km) |  |  |
| B2. Main Respondent’s Name |  |  |
| B3. Main Respondent’s Role in the farm/firm |  | 1=Owner/investor 2=Manager/Caretaker 3=Others (specify) |
| B4. Main Respondent tel. number |  |  |
| B5. Second phone number |  |  |
| B6. What is the respondent’s gender? *(the enumerator can just fill this out)* |  | 1=Male, 0=Female |
| B7. Age of respondent? (rough estimate is fine) |  |  |
| B8. What is your highest educational level? |  | 1=No schooling / 2 = Primary school / 3 = Junior Secondary School / 4=technical or vocational (after junior high) / 5 = Senior Secondary School / 6 = Polytechnic (after senior high) / 7 = University or College Degree / 8 = Postgraduate or Master’s degree / 9 = Doctorate Degree / 10 = Other (specify) |
| ***[Repeat B2-B8 for owner’s profile and another one for manager’s profile, if respondent is not either]*** |  |  |
| B9. What is your marital status? |  | 1 = Married/ consensual union / 2 = Single / 3 = Separated / 4 = Divorced / 5= co-habitation/ living together / 6=Widowed |
| B10. What is the type of household? |  | Read out loud:  Household with both male and female adults ….…..…1  Households with male adult(s) only...…....……2  Households with female adult(s) only……………...…3  [ADULT is defined as those 18 years old and older, including self, spouse, children and other household members. Household is defined as those eating together in same pot and stay in the home for at least 6 months in a year.] |
| B11. [if B9=1], is your household polygamous or monogamous? |  | 1=polygamous, 0=monogamous 666=does not answer |
| B12. [If B9=1], Is your husband/wife absent for more than 5 months in the year? |  | 1=YES 0=NO |
| B13. What is your religion? |  | **1**=Christian, 2=Muslim, 3=Traditional 4=Other (specify) 666=does not answer |

# SECTION C. FISH FARM CHARACTERISTICS AND SPECIES (Owned by HOUSEHOLD/FIRM)

# [To be answered by main respondent (owner and/or manager), if owner is the main respondent, and if these are confidential/sensitive issues for staff/employees, interview owner ONLY. If manager is the main respondent, s/he responds to all of these questions to the best of his/her knowledge]

[still applicable to inactive farmers, it pertains to their last operational cycle; ask screening question if if they remember]

Table C0. Record-keeping practices.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Practice** | **C0. Do you have the following?**  **1=YES**  **0=NO 🡪Next practice** | **C0a. [Ask for the proof/document. Was the respondent able to show a proof/document?]**  1=YES 🡪next practice  2=NO | ~~C0b. [Write here the reason why the respondent was not able to show proof]~~ |
| A | A sketch plan of the farm ~~(alternatively aerial photographs),~~ indicating structures, water sources and layout |  |  |  |
| B | Harvest record |  |  |  |
| C | Sales record |  |  |  |
| D | Record on stocking density, size of fish at stocking, and date of stocking |  |  |  |
|  |  |  |  |  |

**CAGE CULTURE**

Table CA. We are going to ask about your household/firm cages and your production or harvest for the last 2 production seasons or cycles.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| C1. What different species do you farm?  **CODE**  1 = Tilapia  2 = Catfish  3 = Other (Specify) | C2. How many cages do you have (both operational and non-operational)? | C3. What are the sizes of the cages you used during last full production cycle? (m3)  **CODE:**  1 = 5x5x5  2 = 6x6x6  3 = 7x7x7  4 = 10x10x10  5 = other (specify)  *(if multiple, check all the applies)*  *\_\_ \_\_\_ \_\_\_*  *[if inactive, ask for the last time they farmed]* | C3a. Most common cage size  (if only one size of cage, skip this) | C3b. Stocking rate per cage (number of fingerlings)  (if different, write the most common) | Survival rate? (%)  [of the number of fingerlings stocked, how many survived upon harvest?] | C3c. 2nd most common cage size  (if only one size of cage, skip this) | C3d. Stocking rate per cage (number of fingerlings)  (if only one size of cage, skip this) | Survival rate? (%) | C4. How many tonnes of fish did you harvest in LARGEST CAGE and ALL YOUR CAGES **for last 2 full production cycles** (1 tonne=1,000 kg) | | | | | C5. Is production/harvest increasing or decreasing over the last 5 years?  1=Increasing🡪 reason?  2=Decreasing 🡪 reason?  3=Same 🡪 go to next section  4=not applicable (I am a new farmer) |
| C4a. Total harvest from most recent full cycle (tonnes) in the 1 single cage of most common size (see C3a)  0 if none  777=I am a new farmer  999=don’t know/can’t remember | C4b. What was the stocking month and harvest months and year of the most recent full production cycle?  Year \_\_\_\_\_\_  Starting month (code) \_\_\_\_\_\_\_\_  Harvest months (code)  \_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_ | How many months was the most recent full production cycle from stocking to last harvest? [portions of a month are important to capture; if they say 6 months and 2 weeks, write 6.5; if they say 7 months and 1 week, write 7.25] | C4c. How many cages did you use during last full production season/cycle?  0 if none  777=I am a new farmer | C4d. How much total harvests from ALL operational cages during most recent full production cycle (see C4c)? |
| 1. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Month code:** 1=January 2= February 3= March 4=April 5= May 6= June 7= July 8= August 9= September 10= October 11= November 12= December

**POND CULTURE**

C6. How many ponds does your household/firm have (operational and non-operational)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C7. How many ponds did your household/firm use last production season/cycle? \_\_\_\_\_\_\_\_\_\_\_\_\_

Table CB. We would like to ask details of the ponds your household/firm used during the last 2 full production seasons/cycles

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pond No.** | C8. What fish species you farm?  1 = Tilapia  2 = Catfish  3 = Heterotis  4 = Other (Specify)  *(if polyculture, list all)* | | | C9. What are the dimensions the pond? (rough estimate) | | | | | | | | C10. What is the type of pond?  1 = Concrete  2 = Earthen Pond  3 = Earthen with Plastics  4 = Earthen + concrete  5 = Hapas installed in ponds  6=dam  7=tank  8 = Other (Specify) |
| Length | | Width | | Depth – shallowest part | | Depth – deepest part | |
| 1 | 2 | 3 | Size  999=don’t know | Unit  1=feet  2=meter  3=Other (specify) | Size  999=don’t know | Unit  1=feet  2=meter  3=Other (specify) | Size  999=don’t know | Unit  1=feet  2=meter  3=Other (specify) | Size  999=don’t know | Unit  1=feet  2=meter  3=Other (specify) |
| 1 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |  |  |  |

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|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| C11. Let us focus on your biggest tilapia pond, what species?  1 = Tilapia  2 = Catfish  3 = Heterotis  4 = Other (Specify)  *(if polyculture, check all that applies)* | C12. Stocking rate of [Specie] in this pond during last production cycle (number of fingerlings used)  999=don’t know | Survival rate? (%)  [of the number of fingerlings stocked, how many survived upon harvest?] | C13. Total production/harvest **for last 2 full production cycles** (tonne per pond)  (1 tonne=1,000 kg)  999=don’t know  [all harvests for multiple harvests] | | |
| C13a. Most recent full cycle  Year \_\_\_\_\_\_  Starting month (Code) \_\_\_\_\_\_\_\_ | How many months was the most recent full production cycle from stocking to last harvest? [portions of a month are important to capture; if they say 6 months and 2 weeks, write 6.5; if they say 7 months and 1 week, write 7.25] | Harvest (tonne/cycle) |
|  |  |  |  |  |  |
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| --- | --- | --- | --- | --- | --- |
| C14. Let us focus on your smallest tilapia pond, what species?  1 = Tilapia  2 = Catfish  3 = Heterotis  4 = Other (Specify)  *(if polyculture, check all that applies)* | C15. Stocking rate of [Specie] in this pond during last production cycle (number of fingerlings used)  999=don’t know | Survival rate? (%)  [of the number of fingerlings stocked, how many survived upon harvest?] | C16. Total production/harvest **for last 2 full production cycles** (tonne per pond)  (1 tonne=1,000 kg)  999=don’t know  [all harvests for multiple harvests] | | |
| C16a. Most recent full cycle  Year \_\_\_\_\_\_  Starting month (Code) \_\_\_\_\_\_\_\_ | How many months was the most recent full production cycle from stocking to last harvest? [portions of a month are important to capture; if they say 6 months and 2 weeks, write 6.5; if they say 7 months and 1 week, write 7.25] | Harvest (tonne/cycle) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

C17. Is production/harvest increasing or decreasing over the last 5 years?

1=Increasing

2=Decreasing

3=Same

4=not applicable (I am a new farmer)

**C18. How many months on average from the last harvest to the next stocking in the same pond? \_\_\_**[portions of a month are important to capture; if they say 6 months and 2 weeks, write 6.5; if they say 7 months and 1 week, write 7.25]

**C19. How many production cycles you have in a year?**

**FINGERLING PRODUCTION**

C18. Do you have a hatchery? 1=YES 0=NO 2=Partially, we have the structure but not yet operational 🡪 if 0 or 2 skip and go to Module D

C29. Is your hatchery operational? 1=YES 0=NO 🡪 skip and go to Module D

Table CC. We would like to ask details of your hatchery operations during the last full spawning/production seasons/cycles

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| C20. What fish species of fingerlings do you produce?  **CODE**  1 = Tilapia  2 = Catfish  3 = Heterotis  4 = Other (Specify) | C21. Source of broodstock  1=ARDEC  2=Ashaiman  2=Other (specify) | C22. Size of fingerling produced or sold (grams) | C23. Total production/harvest **for last 2 full spawning cycles** (number of fingerlings) | | C24. Is production increasing or decreasing over the last 5 years?  1=Increasing  2=Decreasing  3=Same  4=not applicable (I am a new hatchery) |
| C23a. Most recent full cycle  Year \_\_\_\_\_\_  Starting month (Code) \_\_\_\_\_\_\_\_  Harvest month (code) \_\_\_\_\_\_\_\_\_  0 if none  999=I am a new farmer, no harvest yet | Harvest (pieces) |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

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**C25. How many months on average from the harvest to the next spawning in the same hatchery? \_\_\_**[portions of a month are important to capture; if they say 2 months and 2 weeks, write 2.5; if they say 3 months and 1 week, write 3.25]

**C26. How many spawning cycles you have in a year?**

**SECTION D. HISTORY OF FISH FARMING**

# [To be answered by main respondent (owner and/or manager), if owner is the main respondent, and if these are confidential/sensitive issues for staff/employees, interview owner ONLY. If manager is the main respondent, s/he responds to all of these questions to the best of his/her knowledge]

[still applicable to inactive farmers]

D1. When (what year) did you start tilapia farming? \_\_\_\_\_

D2. Where or from whom did you learn about fish farming for the first time? 1=Extension agent 2=Training/advice from project 3=Training/advice from government 4=Training/advice from private company 5=Input supplier 6=Other farmers/Friend/Neighbor/Family members 7= Group/Association/Organization 8=Newspaper or other printed materials 9=Internet 10= Others (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_

D3. Did you seek any advice or technical support since you started? 1=YES 0=NO 🡪 skip D4

D4. Where or from whom did you seek advice or technical support on fish farming? 1=Extension agent 2=Training/advice from project 3=Training/advice from government 4=Training/advice from private company 5=Input supplier 6= Other farmers/Friend/Neighbor/Family members 7= Group/Association/Organization 8=Newspaper or other printed materials 9=Internet 10= Others (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_

D5. Where did you get your first fingerling/broodstock when you started? 1=ARDEC 2=PAC 3=Ashaiman ADC 4=private hatcheries 5=friends/neighbors 5=own farm 6=from the wild 7=other(specify)

D6. Did you change your inputs, source of inputs, and practices since you started fish farming until now? [if new farmer selected above, skip this D6 questions]

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ITEM | D6a. Did you change anything (e.g., source or practice) on \_\_\_\_? 1=YES 0=NO 2=NA 🡪 if 0,2 next ITEM | D6b. What was the change? | D7c. Why did you change? What made you change?  CODE:   1. Availability 2. Based on training/advice from experts/friends 3. Price 4. High mortality 5. Greater stocking density 6. Greater disease resistance 7. Other (specify) | Based on your experience and changes you made, what can you recommend as best practice  9999=don’t know yet |
| Fish Species |  |  |  |  |
| Fingerling |  |  |  |  |
| Feed |  |  |  |  |
| Water management |  |  |  |  |
| Use of chemicals/drugs/antibiotics |  |  |  |  |
| Stocking rate |  |  |  |  |
| Site/location |  |  |  |  |
| Dimensions of the pond/cage |  |  |  |  |
| Packaging or transporting fingerlings/broodstock |  |  |  |  |
| Size of fingerling bought |  |  |  |  |
| Labor |  |  |  |  |
| Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| D7 | How did the farm/firm come into existence? | *Codes: 1=Started by self/partnership, 2=Inherited, 3=Purchased* |  |

|  |  |  |
| --- | --- | --- |
| D8 | What is your primary motivation for starting this type of farm/firm? ***Enumerator: Do not read out options. Select based on respondent’s answer***| *Code (allow for multiple responses): 1=Availability of raw**material, 2=Others were successful and profitable in this fish farming, 3=There was a high market demand for this product, 4=I received training or advice, 5=I received government/NGO assistance, 6=My capital could only finance this business 7=Other, please specify* |  |
| D9 | What were your reasons for locating the enterprise at this location? | ***Enumerator: Do not read out options. Select based on respondent’s answer***  *| Code (allow for multiple responses): 1=proximity to water source; 2=Proximity to owner’s residence; 3=Proximity to required infrastructure (e.g. roads); 4= Proximity to other farms/firms farming/making the same products; 5=Proximity to raw material supplies 6= Proximity to output markets or customers; 7=Other, please specify* |  |

|  |  |  |
| --- | --- | --- |
| D10 | What were the livelihood and income-generating activities before tilapia farming? (check all the applies) 1=Crop farming 2=other business enterprise (or self employment) 3=farm wage 4= wage/salary from formal employment from government or from private sector 5=I am a retiree 6=Trading 7=capture fishing 8=I am a retiree 9=Other (specify) |  |
| D11 | Right now, What income-generating activities are you currently engaged in? (check all the applies) 1=Crop farming 2=other business enterprise (or self employment) 3=farm wage 4= wage/salary from formal employment from government or from private sector 5=I am a retiree 6=Trading 7=fishing 8=I am a retiree 9=Other (specify) |  |
| D12 | How much of your household’s income is supplied by this tilapia farming? | *Code: nearly all (1), more than half (2), About half (3), less than half (4), almost none (5) (666=I am a new farmer)* |  |
| D12a | [if inactive farmer] How much of your household’s income was supplied by the tilapia farming during the last production year? | *Code: nearly all (1), more than half (2), About half (3), less than half (4), almost none (5)* |  |
| D13 | **What other income-generating activities are more successful or more profitable than fish farming right now based on your knowledge?** (check all the applies) 1=None 2=Crop farming 3=other business enterprise (or self employment) 4=farm wage 5= wage/salary from formal employment from government 6=wage/salary from formal employment from private sector 7=Trading 8=capture fishing 9=Other (specify) 999=don’t know |  |
| D14 | [If D13=1], Which crops were grown in 2018? (select all the applies) (see crop code) |  |
| D15 | [If D13=1] What is the total area cultivated in 2018? (see area unit code) |  |
| D16 | Is the land used for crop farming owned or rented? Please specify the mode of land acquisition (see land code) |  |
| D16a | Is the land used for fish farming owned or rented? Please specify the mode of land acquisition (see land code) [skip if cage farmer] |  |
| D16b | [if inactive farmer], was the land used for fish farming owned or rented? Please specify the mode of land acquisition (see land code) [skip if cage farmer] |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CROP CODE** |  |  |  |  |  |  |
| **FIELD CROPS** |  |  |  |  |  |  |
| 1=Bambara beans | 11=Kenaf | 21=Sugarcane | 31=Coconut | 41=Plantain | 51=Cabbage | 61=Pepper (black) |
| 2=Cassava | 12=Maize | 22 =Sweet potato | 32=Coffee | 42=Rubber | 52=Carrots | 62=Pepper (sweet) |
| 3=Citronella | 13=Millet | 23=Tobacco | 33=Cola | 43=Shea-nut | 53=Cucumber | 63=Pumpkin leaves |
| 4=Cocoyam/Taro | 14=Pepper (hot) | 24=Watermelon | 34=Lime | 44=Sweet berry | 54=Garden eggs | 64=Shallots |
| 5=Cotton | 15=Pigeon peas | 25=Yam | 35=Mango | 45=Dawadawa | 55=Groundnuts, fresh | 65=Talinum leaves |
| 6=Cowpeas | 16=Pumpkin | 26=potato | 36=Nutmeg | 46=Neem | 56=Lettuce | 66=Tomato |
| 7=Flowers | 17=Rice | **TREES** | 37=Oil-palm | 47=Fig | 57=Maize, fresh | 67=Yellow melon  68=Henna |
| 8=Ginger | 18=Sisal | 27=Avocado | 38=Oranges | 48=Kapok | 58=Melon (agusi) |
| 9=Groundnuts | 19=Sorghum | 28=Banana | 39=Paw-paw | 49=Acacia | 59=Okra | 69=Hibiscus |
| 10=Jute | 20=Soyabean | 29=Cashew | 40=Pineapples | **VEGETABLES** | 60=Onions | 70=Other crops (specify |
|  |  | 30=Cocoa |  | 50=Asian vegetables |  |  |

**AREA UNIT CODE:** 1=Acres; 2=Hectares; 3=Poles; 4=Rope; 5=Arm stretch; 6=Square meters; 7=Square yards; 8=Square feet; 9=Others (specify)

**LAND CODE:** 1=Inherited land;2 = Outright purchase; 3=Given free from chief (allocated skin land or community land) 4=Given free by relatives (allocated family land); 5= Given free by government (allocated government land); 6=rented (with rental fee); 7=borrowed (for free use); 8=Sharecropping agreement with landowner; 9=just walked in (e.g., cleared virgin land); 10=Other (specify)

**SECTION E: SOURCES OF INPUTS**

# [To be answered by main respondent (owner and/or manager), if owner is the main respondent, and if these are confidential/sensitive issues for staff/employees, interview owner ONLY. If manager is the main respondent, s/he responds to all of these questions to the best of his/her knowledge]

[still applicable to inactive farmers, it pertains to their last operational cycle]

Table EA. Kindly tell us some more details about your tilapia seed or fingerlings, feeds and water source

|  |  |  |  |
| --- | --- | --- | --- |
| Questions |  | Answer | Code |
| **FINGERLING** |  |  |  |
| E1... Which tilapia strain did you use during last season/cycle? (check all that applies) |  |  | 1 = ARDEC/Akosombo / 2 = Other (Specify) 3=Do not know |
| E2. What was the source of the tilapia stock or strain? [if recycled from last season, what was the source when they bought the last time] |  |  | 1=ARDEC 2=PAC 3=Ashaiman ADC 4=private hatcheries 5=friends/neighbors 6=own farm 7=own hatchery or fingerling production 8=from the wild 9=other(specify) |
| E3. [skip of E2=6,8] What is the type of broodstock/fingerling bought? |  |  | 1 = Single sex / 0 = Mixed sexes |
| E4. If E2=4, 5, or 9, what is the name of the source of your broodstock/fingerlings? (list up to two main sources) |  |  |  |
| E5a. Location: Zone | E5b. Location: Zone |  |  |
| E6a. Location: District | E6b. Location: District |  |  |
| E7a. Contact name and telephone number | E7b. Contact name and telephone number |  |  |
| E8a. How did you know or learn about them? | E8b. How did you know or learn about them? |  | 1=Project, 2=MoFA extension agent, 3=Hatchery’s own marketing and promotion, 4=Friend/neighbor, 5=farmer association 6=Other (specify) |
| E9. Do you have any preference where or which source you buy from? |  |  | 1=Yes, 0=No |
| E10. [If yes, which one? |  |  | 1=ARDEC 2=PAC 3=Ashaiman ADC 4=private hatcheries 5=friends/neighbors 5=own farm 6=own hatchery or fingerling production 7=from the wild 8=other(specify) |
| E11. If yes, Why? |  |  |  |
| **[skip E12-E14 if E2=6,7, 8]** |  |  |  |
| E12. What is the size of the fingerling bought during last season/cycle? (in grams) |  |  |  |
| E13. What is your preferred size of fingerlings that come from hatchery? (in grams) |  |  |  |
| E14. [if E12 and E13 are different] Why different? |  |  |  |
| **[skip E15-E25 if E2=6, 8]** |  |  |  |
| E15. How is the fingerling/broodstock packaged? |  |  | 1= fish tank, 2=double bag 3=Other (specify) |
| E16. Do you have preference on how the fingerling/broodstock should be packaged? |  |  | 1=YES 0=NO |
| E17. What is your preference? |  |  |  |
| E18. [if E15 and E17 are different] Why different? |  |  |  |
| E19. Do you have some influence in the type of packaging used? |  |  | 1=YES 0=NO |
| E20. How was the fingerling/broodstock transported? |  |  | 1= Own vehicle 2=hatchery’s vehicle, 3=I hire transporters, 4=hatchery hires transporters, 5=Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| E21. Do you have preference on how the fingerling/broodstock should be transported? |  |  | 1=YES 0=NO |
| E22. What is your preference? |  |  |  |
| E23. [if E20 and E22 are different] Why different? |  |  |  |
| E24. Do you have some influence on how the fingerling/broodstock is transported? |  |  | 1=YES 0=NO |
| E25. Are you responsible or in charge of transporting the fingerling/broodstock? |  |  | 1=YES 0=NO |
| E26. In the last or most recent fingerling transport, what was the mortality rate? (%) |  |  |  |
| **[ASK QUESTIONS BELOW TO ALL RESPONDENTS]** |  |  |  |
| E26. At what stage (what grams) of fingerling or fish have you experienced the most mortality? (range in grams) |  |  | From \_\_\_\_\_ to \_\_\_\_ |
| E27. In other countries, nurseries (i.e., producing fingerlings of up to 10g -15g for grow-out farmers) are profitable business ventures, when managed properly. Greater mortality rates occur at fingerling and juvenile production stages, so nursery operation can be potentially riskier, more knowledge-intensive and more capital-intensive business than grow-out farms. But with intensive training and technical support and high enough prices for the juveniles to be sold to farmers, nursery operations may prove to be profitable. One of the aims of this study is to assess the feasibility and test a few pilot nurseries in Ghana. Are you interested and willing to pilot test a nursery operation (i.e., producing fingerlings of up to 10g -15g for grow-out farmers)? |  |  | 1=YES  0=NO  2=I do not know yet (I need more information) 🡪 skip and proceed to E30 |
| E28. Why YES or NO? |  |  |  |
| E29. [If E27=1 or 2], do you have the required additional investments to upgrade into nursery and to be sustainable **(a potential project can only provide technical support but not financial support)?** |  |  | 1 = Yes / 0 = No |
| E30. Do you have a quarantine system for new or returning seed/fish (not necessarily new building, it can be just a compartment/section/hapa system to separate new broodstock/fish from existing/main ones) |  |  | 1 = Yes / 0 = No |
| E31. Do you conduct in-house training for staff/employees? |  |  | 1 = Yes / 0 = No |
| **WATER** |  |  |  |
| E32.What is the source of water used in tilapia farming? |  |  | 1 = well / 2= River/lake/stream / 3= Groundwater / 4 = tap water / 5 = borehole 6= Lake 7=Dam/irrigation 8=Harvested rainwater 9= Other (Specify) |
|  |  |  |  |
| E34. Do you treat your water before discharge? [only for pond farmers] |  |  | 1 = Yes / 0 = No |
| E35. Source of water for post-harvest? |  |  | 1 = well / 2= River/lake/stream / 3= Groundwater / 4 = tap water / 5 = borehole 6= Lake 7=Dam/irrigation 8=Harvested rainwater 9= Other (Specify) |
| E36. Do you have water quality record? |  |  | 1=YES 🡪 Ask for the proof/document. Mark if respondent was able to show proof  0=NO |
| E37. How do you check water quality? (check all that applies) |  |  | 1. Use instruments/gadgets to check 2. Through observing the color of water 3. Presence of algae 4. Behavior of the fish 5. Smell of the water 6. Others (specify) |
|  |  |  |  |
| E39. Do you have effluent (waste water) management record? |  |  | 1=YES 🡪 Ask for the proof/document. Mark if respondent was able to show proof  0=NO |
| E39a. How do you dispose of waste water? |  |  |  |
| E40. How often do you change, add or renew pond water? [only for pond farmers] |  |  | 1=daily, 2=weekly, 3=monthly, 4=few times a year, 5=almost never, 6=other (specify) |
|  |  |  |  |
| E41. Did you dispose the sediment of this facility? |  |  | 1=yes  0=no (skip to E41a and E41b) |
| E41a. After how many cycles did you remove the sediment? (number of cycle) |  |  |  |
| E41b. To where did you dispose the sediment? |  |  | 1=river  2=on the dyke  3=crop field  99=other(specify) |
|  |  |  |  |
| **FEED** |  |  |  |
| E42. What starter feeds are used? (check all that applies) |  |  | (**CODE:** 1 = Raanan / 2 = Multifeed / 3 = Aller / 4 = Coppens / 5 = on farm production / 6 = Others (Specify) |
| E42a. if on farm production selected, specify the raw materials/ingredients (check all) |  |  | 1. hay, 2= corn, 3=maggot, 4=chicken droppings, 5=tiny fish meals, 6=bran, 7=cassava, 8=legumes/beans/peas 9=palm kernel, 10=others (specify) |
| E43. What grow-out feeds are used? (check all that applies) |  |  | (**CODE:** 1 = Raanan / 2 = Multifeed / 3 = Aller / 4 = Coppens / 5 = on farm production / 6 = Others (Specify) |
| E43a. if on farm production selected, specify the raw materials/ingredients (check all) |  |  | 1. hay, 2= corn, 3=maggot, 4=chicken droppings, 5=tiny fish meals, 6=bran, 7=cassava, 8=legumes/beans/peas 9=palm kernel, 10=others (specify) |
| E44. Do you have feeds and feeding record? |  |  | 1=YES 🡪 Ask for the proof/document. Mark if respondent was able to show proof  0=NO |
| E45. How do you determine feeding amount? (check all that applies) |  |  | 1=recommendation by feed supplier  2=based on fish feeding behavior  3=fish body weight  4=other (specify) |

Table EB. What are the sources, distance and perceptions of inputs used in tilapia production?

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **E46. Input** |  | E47. Did you use input in production **CODE**:  1 = Yes  0 = No | E48. What is the source?  **Code:**1= agro input dealer shop 2= FC extension agent 3=hatchery 4= colleague farmers 5= MoFA extension agents 6=market 7=own farm 8=Other (specify) | E49a. Distance from the nearest source to farm  0=own farm | E49b. Unit  **Code:** 1= km / 2= miles 3= minutes | E50. Perception on Quality  **CODE:**  1 = Very good  2 = Good  3 = Somewhat good  4 = Not good | E50a. Comments section [capture any relevant stories or why they give this rating, but do not spend too much time on this, please manage the time] | E51. Perception of Availability  **CODE:**  1 = Very good  2 = Good  3 = Somewhat good  4 = Not good | E51a. Comments section [capture any relevant stories or why they give this rating, but do not spend too much time on this, please manage the time] | E52. Perception on Affordability  **CODE:**  1 = Very good  2 = Good  3 = Somewhat good  4 = Not good | E52a. Comments section [capture any relevant stories or why they give this rating, but do not spend too much time on this, please manage the time] |
| Fingerlings (if more than 1 type/source, specify 2 major types/sources and then rate) |  |  |  |  |  |  |  |  |  |  |  |
| Name of fingerling type 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | A |  |  |  |  |  |  |  |  |  |  |
| Name of fingerling type 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | B |  |  |  |  |  |  |  |  |  |  |
| Starter Feed (if more than 1 type/source, specify 2 major types/sources and then rate) (must be consistent with E42 above) (if own on farm production, specify the 2 major raw materials/ingredients) |  |  |  |  |  |  |  |  |  |  |  |
| Feed type 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | c |  |  |  |  |  |  |  |  |  |  |
| Feed type 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | d |  |  |  |  |  |  |  |  |  |  |
| Growout Feed (if more than 1 type/source, specify 2 major types/sources and then rate) (must be consistent with E43 above) (if own on farm production, specify the 2 major raw materials/ingredients) |  |  |  |  |  |  |  |  |  |  |  |
| Feed type 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | e |  |  |  |  |  |  |  |  |  |  |
| Feed type 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | f |  |  |  |  |  |  |  |  |  |  |
| Fertilizer for fish pond | g |  |  |  |  |  |  |  |  |  |  |
| Lime for fish pond | h |  |  |  |  |  |  |  |  |  |  |
| Vaccines, drugs, antibiotics, hormones, other chemicals | i |  |  |  |  |  |  |  |  |  |  |
| Extension / Technical service on fish farming | L |  |  |  |  |  |  |  |  |  |  |
| Labor | M |  |  |  |  |  |  |  |  |  |  |
| Water source for cage or pond farming | N |  |  |  |  |  |  |  |  |  |  |
| Water source for postharvest | O |  |  |  |  |  |  |  |  |  |  |
| Transporters | P |  |  |  |  |  |  |  |  |  |  |
| Materials needed for pond or cage construction/maintenance | Q |  |  |  |  |  |  |  |  |  |  |
| Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |  |  |  |  |  |  |

E53. If E47i is yes, do you have or keep records of drug/chemical/antibiotic use?

1=YES 🡪 Ask for the proof/document. Mark if respondent was able to show proof, if not, write reason why the respondent was not able to show proof

0=NO

**SECTION F: TILAPIA FARMS COST OF PRODUCTION**

# [To be answered by main respondent (owner and/or manager), if owner is the main respondent, and if these are confidential/sensitive issues for staff/employees, interview owner ONLY. If manager is the main respondent, s/he responds to all of these questions to the best of his/her knowledge]

[still applicable to inactive farmers, it pertains to their last operational cycle; ask screening question if they remember]

**CAGE CULTURE**

Table FA. Kindly tell us the fixed costs in setting up **the cages**, and how long is the life span of each of the equipment and assets.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **FIXED COST** | F1.  Do you have this? 1=YES  0=No 🡪 next item | **[Ask for the proof/document. Was the respondent able to show a proof/document?]**  1=YES  2=NO | F2.  Is this rented/ leased or bought/ owned?  1=Bought/ owned 🡪 F3  0=Rented/ leased 🡪 skip F3 and go to F4 | F4.  Cost of purchase or rental/ lease (GHS)  999=don’t know/can’t remember | F5. Please specify if the cost given is for 1 cage or all cage operations  1=only 1 cage  2=all cages  3=other (specify) | F6. Please specify the number of years this cost applies to (life span of the equipment or asset or length of lease/rental/permit)  [e.g., if lifespan of warehouse built is 10 years, type in 10; if land lease is for 20 years, type in 20; if permit is for 6 months renewal, type in 0.5] |
| **Land and building:** |  |  |  |  |  |  |
| Land |  |  |  |  |  |  |
| Site evaluation & selection |  |  |  |  |  |  |
| Warehouse (for equipment and feed) |  |  |  |  |  |  |
| Offices and on-site housing facilities |  |  |  |  |  |  |
| Others (specify)\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |  |
| **Fishing Gear:** |  |  |  |  |  |  |
| Construction & installation of fish cages with platform |  |  |  |  |  |  |
| Canoe and accessories |  |  |  |  |  |  |
| Outboard motors |  |  |  |  |  |  |
| Protective gears (life jackets, scoop nets etc.) |  |  |  |  |  |  |
| Others (specify)\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |  |
| **Machinery, equipment, furniture & fittings** |  |  |  |  |  |  |
| Generator |  |  |  |  |  |  |
| Ice making machine |  |  |  |  |  |  |
| Cold storage or cold chain |  |  |  |  |  |  |
| Deep freezer |  |  |  |  |  |  |
| Water quality equipment (including oxygen meters) |  |  |  |  |  |  |
| Security/monitoring equipment (CCTV, lights, etc.) |  |  |  |  |  |  |
| Others (specify) |  |  |  |  |  |  |
| **Permits:** |  |  |  |  |  |  |
| Environmental permit cost |  |  |  |  |  |  |
| Water Use permit cost |  |  |  |  |  |  |
| Operational permit from FC cost |  |  |  |  |  |  |
| District Assembly permit cost |  |  |  |  |  |  |
| VRA water allocation Permit cost |  |  |  |  |  |  |
| Other (Specify) \_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |  |
| **Other materials/tools:** |  |  |  |  |  |  |
| Pelleting machine |  |  |  |  |  |  |
| Vehicles |  |  |  |  |  |  |
| Others (specify) |  |  |  |  |  |  |

Table FB. Kindly specify the input used, quantity used and prices for the entire latest season/harvest (5-6 months) for **all operational cages**

F7a. Costs given is for 1 single most common cage or all operational cages? 1=1 single most common cage only / 0=all operational cages

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Did you use this? Yes = 1 / No = 0** | **Quantity** | **Unit**  **(CODE)**  **[if bought in bulk, put 1 in A and choose option 6]** | **Cost per unit (GHS/ unit)** | **Total cost of selected cage for entire season/cycle (GHS)** |
|  |  | **A** |  | **B** | **A x B** |
| **VARIABLE COSTS** | **F7b** | **F8** | **F9** | **F10** | **F11** |
| Fingerling/broodstock (piece) |  |  |  |  |  |
| Feed |  |  |  |  |  |
| Chemical (Salt, potassium permanganate) |  |  |  |  |  |
| Drugs (antibiotics, etc. ) |  |  |  |  |  |
| Hormones |  |  |  |  |  |
| Vaccines |  |  |  |  |  |
| Fuel |  |  |  |  |  |
| Transportation cost (aside from fuel) |  |  |  |  |  |
| Electricity (e.g., cold storage) |  |  |  |  |  |
| Disinfectants |  |  |  |  |  |
| New anchor to reposition cage (items purchased aside labor) |  |  |  |  |  |
| Mending of nets (items purchased aside labor) |  |  |  |  |  |
| Refabricating of galvanized pipes (items purchased aside labor) |  |  |  |  |  |
| Replacement of worn-out barrels (items purchased aside labor) |  |  |  |  |  |
| Other (specify)\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |

**(UNIT CODE: 1 = kg / 2 = 20kg / 3 = 50kg / 4 = litres / 5 = piece / 6 = in bulk (one time payment) 7 = Other (specify) \_\_\_\_\_\_\_\_\_\_\_)**

**POND CULTURE**

Table FC. Kindly tell us the fixed costs in setting up **this largest tilapia pond** and how long is the life span of each of the equipment and assets.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIXED COST** | F12b.  Do you have this? 1=YES  0=No 🡪 next item | F13.  Is this rented/leased or bought/owned?  1=Bought/ owned 🡪 F14  0=Rented/ leased 🡪 skip F14 and go to F15 | F15.  Cost of purchase or rental/lease (GHS) | F16. Please specify if the cost given is for this pond or all pond operations  1=only 1 pond  2=all ponds  3=other (specify) | F17. Please specify the number of years this cost applies to (life span of the equipment or asset or length of lease/rental/permit)  [e.g., if lifespan of warehouse built is 10 years, type in 10; if land lease is for 20 years, type in 20; if permit is for 6 months renewal, type in 0.5] |
| **Land and building:** |  |  |  |  |  |
| Land |  |  |  |  |  |
| Site evaluation & selection cost |  |  |  |  |  |
| Warehouse (for equipment and feed) |  |  |  |  |  |
| Offices and on-site housing facilities |  |  |  |  |  |
| Others (specify)\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |
| **Pond construction:** |  |  |  |  |  |
| Construction & installation of fish pond |  |  |  |  |  |
| Water system (water inlet and outlet/monk) |  |  |  |  |  |
| Plumbing/pipping system |  |  |  |  |  |
| Pumps |  |  |  |  |  |
| Aerators |  |  |  |  |  |
| Protective gears (life jackets, scoop nets etc.) |  |  |  |  |  |
| Others (specify)\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |
| **Machinery, equipment, furniture & fittings** |  |  |  |  |  |
| Generator |  |  |  |  |  |
| Ice making machine |  |  |  |  |  |
| Deep freezer |  |  |  |  |  |
| Water quality equipment (including oxygen meters) |  |  |  |  |  |
| Security/monitoring equipment (CCTV, lights, etc.) |  |  |  |  |  |
| Others (specify) |  |  |  |  |  |
| **Permits:** |  |  |  |  |  |
| Environmental permit cost |  |  |  |  |  |
| Operational permit from FC cost |  |  |  |  |  |
| District Assembly permit cost |  |  |  |  |  |
| Other (Specify) \_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |
| **Other material/tools:** |  |  |  |  |  |
| Pelleting machine |  |  |  |  |  |
| Vehicles |  |  |  |  |  |
| Others (specify) |  |  |  |  |  |

Table FD: Kindly specify the feeds used, quantity used and prices for the entire latest season/harvest (5-6 months) for **this largest tilapia pond.**

F18a. Costs given is for largest pond or all operational ponds? 1=largest pond only / 0=all operational ponds

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **VARIABLE COSTS** |  | **Did you use this? Yes = 1 / No = 0** | **Quantity** | **Unit**  **(CODE)\***  **[if bought in bulk, put 1 in A and choose option 6 here]** | **Cost per unit (GHS/ unit)** | **Total cost for this largest pond for entire season/cycle (GHS)** |
|  |  |  | **A** |  | **B** | **A x B** |
|  |  | F18b | F19 | F20 | F21 | F22 |
| Fingerling/broodstock (piece) | A |  |  |  |  |  |
| Feed | B |  |  |  |  |  |
| Lime for pond | C |  |  |  |  |  |
| Fertilizer for pond | D |  |  |  |  |  |
| Drugs (antibiotics, etc. ) | E |  |  |  |  |  |
| Hormones | F |  |  |  |  |  |
| Vaccines | G |  |  |  |  |  |
| Fuel | H |  |  |  |  |  |
| Transportation cost (aside from fuel) | I |  |  |  |  |  |
| Electricity (e.g., cold storage) | J |  |  |  |  |  |
| Disinfectants | K |  |  |  |  |  |
| Items purchased for pond maintenance | L |  |  |  |  |  |
| Other (specify)\_\_\_\_\_\_\_\_\_\_\_ | M |  |  |  |  |  |

**(UNIT CODE: 1 = kg / 2 = 20kg / 3 = 50kg / 4 = litres / 5 = piece / 6 = in bulk (one time payment) / 7 = Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_)**

**TILAPIA FINGERLING PRODUCTION**

Think of the tilapia hatchery from Table CC and we will ask details on production costs for that tilapia hatchery.

Table FE. Kindly tell us the fixed costs in setting up **this tilapia hatchery,** and how long is the life span of each of the equipment and assets.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FIXED COST** | F23.  Do you have this? 1=YES  0=No 🡪 next item | F24.  Is this rented/leased or bought/owned?  1=Bought/ owned 🡪 F25  0=Rented/ leased 🡪 skip F25 and go to F26 | F26.  Cost of purchase or rental/lease (GHS) | F27. Please specify if the cost given is for this hatchery or all hatchery operations or including grow-out?  1=only 1 hatchery  2=all hatcheries  3=All hatcheries+all grow-out farms  4=other (specify) | F28. Please specify the number of years this cost applies to (life span of the equipment or asset or length of lease/rental/permit)  [e.g., if lifespan of warehouse built is 10 years, type in 10; if land lease is for 20 years, type in 20; if permit is for 6 months renewal, type in 0.5] |
| **Hatchery construction:** |  |  |  |  |  |
| Construction & installation of fish pond |  |  |  |  |  |
| Water system (water inlet and outlet/monk) |  |  |  |  |  |
| Plumbing/pipping system |  |  |  |  |  |
| Pumps |  |  |  |  |  |
| Aerators |  |  |  |  |  |
| Protective gears (life jackets, scoop nets etc.) |  |  |  |  |  |
| Others (specify)\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |

Table FF: Kindly specify the feeds used, quantity used and prices for the entire latest season/harvest (2-3 months) for **this tilapia hatchery.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **VARIABLE COSTS** | **Did you use this? Yes = 1 / No = 0** | **Quantity** | **Unit**  **(CODE)**  **[if bought in bulk, put 1 in A and choose option 6]** | **Cost per unit (GHS/ unit)** | **Total cost for this 1 hatchery for entire season/cycle (GHS)** |
|  |  | **A** |  | **B** | **A x B** |
|  | **F41** | **F42** | **F43** | **F44** | **F45** |
| Broodstock |  |  |  |  |  |
| Feed |  |  |  |  |  |
| Fertilizer for pond |  |  |  |  |  |
| Drugs (antibiotics, etc. ) |  |  |  |  |  |
| Hormones |  |  |  |  |  |
| Vaccines |  |  |  |  |  |
| Fuel |  |  |  |  |  |
| Transportation cost (aside from fuel) |  |  |  |  |  |
| Permits; District Assembly fee (yearly) |  |  |  |  |  |
| Electricity (e.g., cold storage) |  |  |  |  |  |
| Disinfectants |  |  |  |  |  |
| Items purchased for hatchery maintenance |  |  |  |  |  |
| Other (specify)\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |

**(UNIT CODE: 1 = kg / 2 = 20kg / 3 = 50kg / 4 = litres / 5 = piece / 6 = in bulk (one time payment) / 7 = Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_)**

# SECTION G: FAMILY AND HIRED LABOUR

# [To be answered by main respondent (owner and/or manager), if owner is the main respondent, and if these are confidential/sensitive issues for staff/employees, interview owner ONLY. If manager is the main respondent, s/he responds to all of these questions to the best of his/her knowledge]

[still applicable to inactive farmers, it pertains to their last operational cycle; ask screening question if they remember]

Table GA. Kindly list all family or communal (free) labor, including yourself, and all laborers and employees hired (full time or part time), for all the operational cages/ponds/hatcheries during last full production cycle/season.

**HOUSEHOLD SIZE**

G1. Kindly tell us the number of members in your households, including yourself (defined as members eating together from one pot and stays in the household for at least 6 months per year).

|  |  |  |
| --- | --- | --- |
| Household size | Male | Female |
| 0-5 |  |  |
| 6-17 |  |  |
| 18-30 |  |  |
| 31-35 |  |  |
| 36-50 |  |  |
| 51-65 |  |  |
| >65 |  |  |
| Total |  |  |

**FAMILY OR COMMUNAL LABOR**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| List of activities | How many family members (and communal labor and including yourself) worked on selected cage (pond) for entire cycle? | | | | Average hours ALL the labor worked per day | | | | How many days did ALL those people take to complete \_\_\_ for the entire cycle? | | | |
| G2 | G3 | G4 | G5 | G6 | G7 | G8 | G9 | G10 | G11 | G12 | G13 |
| **Aquaculture operations** | Youth Male (=<35 of age) | Older Male (>35) | Youth Female (=<35) | Older Female (>35) | Youth Male (=<35 of age) | Older Male (>35) | Youth Female (=<35) | Older Female (>35) | Youth Male (=<35) | Older Male (>35) | Youth Female (=<35) | Older Female (>35) |
| Stocking |  |  |  |  |  |  |  |  |  |  |  |  |
| Fertilization |  |  |  |  |  |  |  |  |  |  |  |  |
| Feeding and application of drugs/hormones/chemicals |  |  |  |  |  |  |  |  |  |  |  |  |
| Harvesting |  |  |  |  |  |  |  |  |  |  |  |  |
| Post-harvest (e.g., packaging, degutting, transporting, marketing, selling) |  |  |  |  |  |  |  |  |  |  |  |  |
| Pond maintenance (e.g., cleaning inlet and outlet, water management, removal of weeds from ponds, etc.) |  |  |  |  |  |  |  |  |  |  |  |  |
| Cage maintenance (e.g., new anchor to reposition cage, sewing/mending nets, refabricating of galvanized pipes, replacement of worn-out barrels, etc.) |  |  |  |  |  |  |  |  |  |  |  |  |
| Hatchery maintenance (e.g. cleaning inlet and outlet, water management, etc.) |  |  |  |  |  |  |  |  |  |  |  |  |
| Diving |  |  |  |  |  |  |  |  |  |  |  |  |
| Security |  |  |  |  |  |  |  |  |  |  |  |  |
| Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |  |  |  |  |  |  |  |

**HIRED LABOR**

Table GA. How many permanent and casual employees working on the ponds/cages/hatcheries by function, gender and age groupings? [if no hired labor, skip go to next section]

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | MALE | | | FEMALE | | |
|  | Total | Youth Male (=<35 of age)  [if don’t know ages and cannot separate based on age cut-off, skip the breakdown] | Older Male (>35) | Total | Youth Female (=<35 of age) | Older Female (>35) |
|  | G14a. | G14b. | G14c. | G14d. | G14e. | G14f. |
| **Total Permanent employees (do not double count, enter an employee only once)** |  |  |  |  |  |  |
| Management |  |  |  |  |  |  |
| Finance |  |  |  |  |  |  |
| Administrative/Secretarial |  |  |  |  |  |  |
| Aquaculture/hatchery operations (per activity is detailed below) |  |  |  |  |  |  |
| **Total casual or temporary workers (per activity is detailed below)** |  |  |  |  |  |  |

Table GB. Hired labor per activity

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| List of activities | How many hired labor (permanent and casual) worked on selected cage (pond) for entire cycle? | | | | Average hours ALL the hired labor worked per day | | | | How many days did ALL those people take to complete \_\_\_ for the entire cycle? | | | |
| G15 | G16 | G17 | G18 | G19 | G20 | G21 | G22 | G23 | G24 | G25 | G26 |
| **Aquaculture operations** | Youth Male (=<35 of age)  [if don’t know ages and cannot separate based on age cut-off, split equally into 2] | Older Male (>35) | Youth Female (=<35) | Older Female (>35) | Youth Male (=<35 of age) | Older Male (>35) | Youth Female (=<35) | Older Female (>35) | Youth Male (=<35) | Older Male (>35) | Youth Female (=<35) | Older Female (>35) |
| Stocking |  |  |  |  |  |  |  |  |  |  |  |  |
| Fertilization |  |  |  |  |  |  |  |  |  |  |  |  |
| Feeding and application of drugs/hormones/chemicals |  |  |  |  |  |  |  |  |  |  |  |  |
| Harvesting |  |  |  |  |  |  |  |  |  |  |  |  |
| Post-harvest (e.g., packaging, degutting, transporting, marketing, selling) |  |  |  |  |  |  |  |  |  |  |  |  |
| Pond maintenance (e.g., cleaning inlet and outlet, water management, removal of weeds from ponds, etc.) |  |  |  |  |  |  |  |  |  |  |  |  |
| Cage maintenance (e.g., new anchor to reposition cage, sewing/mending nets, refabricating of galvanized pipes, replacement of worn-out barrels, etc.) |  |  |  |  |  |  |  |  |  |  |  |  |
| Hatchery maintenance (e.g. cleaning inlet and outlet, water management, etc.) |  |  |  |  |  |  |  |  |  |  |  |  |
| Diving |  |  |  |  |  |  |  |  |  |  |  |  |
| Security |  |  |  |  |  |  |  |  |  |  |  |  |
| Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |  |  |  |  |  |  |  |

Table GC. Wage rates per activity [if same wage rates by gender and age grouping, just copy same responses]

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| List of activities | Wage rate (GHS) | Unit of the wage  1=per day  2=per hour  3=whole activity  4=whole pond/cage  5=per month  6=other (specify) | Is this same between male and female or youth and nonyouth? 1=YES 🡪 next activity  0=NO -> ask details in G30-37 | Wage rate (GHS) | Unit of the wage  1=per day  2=per hour  3=whole activity  4=whole pond/cage  5=per month  6=other (specify) | Wage rate (GHS) | Unit of the wage  1=per day  2=per hour  3=whole activity  4=whole pond/cage  5=per month  6=other (specify) | Wage rate (GHS) | Unit of the wage  1=per day  2=per hour  3=whole activity  4=whole pond/cage  5=per month  6=other (specify) | Wage rate (GHS) | Unit of the wage  1=per day  2=per hour  3=whole activity  4=whole pond/cage  5=per month  6=other (specify) |
| G27 | G28 | G29 | G30 | G31 | G32 | G33 | G34 | G35 | G36 | G37 |
| **Aquaculture operations** | **General** | |  | **Male** | | **Female** | | **Youth (=<35)** | | **Older (>35)** | |
| Stocking |  |  |  |  |  |  |  |  |  |  |  |
| Fertilization |  |  |  |  |  |  |  |  |  |  |  |
| Feeding and application of drugs/hormones/chemicals |  |  |  |  |  |  |  |  |  |  |  |
| Harvesting |  |  |  |  |  |  |  |  |  |  |  |
| Post-harvest (e.g., packaging, degutting, transporting, marketing, selling) |  |  |  |  |  |  |  |  |  |  |  |
| Pond maintenance (e.g., cleaning inlet and outlet, water management, removal of weeds from ponds, etc.) |  |  |  |  |  |  |  |  |  |  |  |
| Cage maintenance (e.g., new anchor to reposition cage, sewing/mending nets, refabricating of galvanized pipes, replacement of worn-out barrels, etc.) |  |  |  |  |  |  |  |  |  |  |  |
| Hatchery maintenance (e.g. cleaning inlet and outlet, water management, etc.) |  |  |  |  |  |  |  |  |  |  |  |
| Diving |  |  |  |  |  |  |  |  |  |  |  |
| Security |  |  |  |  |  |  |  |  |  |  |  |
| Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |  |  |  |  |  |  |  |  |  |

**SECTION H: TILAPIA HARVESTS, SALES, PRICES**

# [To be answered by main respondent (owner and/or manager), if owner is the main respondent, and if these are confidential/sensitive issues for staff/employees, interview owner ONLY. If manager is the main respondent, s/he responds to all of these questions to the best of his/her knowledge]

[still applicable to inactive farmers, it pertains to their last operational cycle; ask screening question if they remember]

Table HA. Kindly specify amount consumed, amount sold, where, how or to whom do you sell your farmed tilapia harvest (all harvests, all cages/ponds) and at what prices for the last cycle?

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sizes  [If many different harvesting times during last full cycle, include all and aggregate in responses] | % of total harvest | % consumed  [% consumed and sold must be equal to 100%] | % sold | Buyers (please check all that applies) | | | | | Price (GHS/kg) | |
| Aggregator | Sales/market outlet | Supermarket | Restaurant/  schools | Other (specify) | Main buyer | Second buyer |
|  | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 |
| Size 4 (1 fish is almost 1 kg) |  |  |  |  |  |  |  |  |  |  |
| Size 3 (3 fish for 2 kg) |  |  |  |  |  |  |  |  |  |  |
| Size 2 (2 fish for 1 kg) |  |  |  |  |  |  |  |  |  |  |
| Size 1 (3 fish for 1 kg) |  |  |  |  |  |  |  |  |  |  |
| Regular (4-5 fish for 1 kg) |  |  |  |  |  |  |  |  |  |  |
| Economy (5-6 fish for 1 kg) |  |  |  |  |  |  |  |  |  |  |
| Small Size (6-8 fish for 1 kg) |  |  |  |  |  |  |  |  |  |  |
| School boys (8-10 fish for 1 kg) |  |  |  |  |  |  |  |  |  |  |
| Reject (10-12 fish for 1 kg) |  |  |  |  |  |  |  |  |  |  |
| Mixed sizes |  |  |  |  |  |  |  |  |  |  |
| Do not know the size |  |  |  |  |  |  |  |  |  |  |

H11. Who sells your products after harvest? 1 = Self / 2 = Spouse / 3 = Other male family members / 4 = other female family members / 5 = Fish dealer / 6= sales person in the firm / 7 = Other

H12. Who determines the prices of your products? (do not read, check all the are mentioned) 1 = Self / 2 = Aggregator / 3=Retailer / 4 = Bigger farmers/firms / 5=others (specify)

H13. How are the prices determined? 1 = Prevailing market price / 2 = Based on cost of production / 3 = Arbitrarily / 4 = Other (specify)

**FOR HATCHERY OR FINGERLING PRODUCTION**

For hatchery or fingerling production operation, kindly specify amount used in own grow-out amount sold, where, how or to whom do you sell your fingerling and at what prices for the last cycle?

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sizes of fingerlings sold (grams) | % used in own grow-out farm  [% used in own grow-out and sold must be equal to 100%] | % sold | Buyers (please check all that applies) | | | | | Price (GHS/kg) | |
| Minor or small-scale farmers within zone | Minor or small-scale farmers outside zone | Medium scale farmers | Large scale farmers | Other (specify) | Main buyer | Second buyer |
|  | H20 | H21 | H22 | H23 | H24 | H25 | H26 | H27 | H28 |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

# SECTION I. SHOCKS IN THE PAST 5 YEARS

Table IA. Did you experience any sudden shocking experiences or extreme events that affected your fish farming in the past 5 years? 1= Yes / 0= No

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Shock |  | Did you experience any adverse shocks that affected your fish farming in the past 5 years? Such as ----------  *1=Yes 2=No 🡪 go to next shock* | In which year did you experience this shock (2014 to present)? (list all relevant years)  *(Year)* | | |
| **IA** | **I1.** | **I2.** | **I3.** | **I4.** |
| Disease causing mortality of fish | 1 |  |  |  |  |
| Natural Disasters (winds, Drought/irregular rain storms) affecting fish production | 2 |  |  |  |  |
| Poor water quality | 3 |  |  |  |  |
| Floods/landslide (due to heavy rains) | 4 |  |  |  |  |
| Human epidemic/disease | 5 |  |  |  |  |
| Livestock disease | 6 |  |  |  |  |
| Devastating crop pest/disease | 7 |  |  |  |  |
| Death of close family member | 8 |  |  |  |  |
| Theft | 9 |  |  |  |  |
| Unusually high prices of inputs | 10 |  |  |  |  |
| Unusually low prices of tilapia |  |  |  |  |  |
| Fire | 13 |  |  |  |  |
| Other (specify) \_\_\_\_\_\_\_ | 14 |  |  |  |  |

**Section J: Intrahousehold participation and decisionmaking**

[Interview primary male and primary female in the household separately and alone (if possible)]

|  |  |  |
| --- | --- | --- |
| **J0. Ability to be interviewed alone (to be marked by enumerator)** |  | Alone ............................................................ ……..1  With adult female/s present .......................... ……..2  With adult male/s present ............................. ……..3  With adults mixed sex present ..................... ……..4  With children present .................................. …….. 5  With adults mixed sex and children present…….…6 |

**K1. Profile of Second respondent only** (has to be the opposite sex as the main respondent)

|  |  |  |
| --- | --- | --- |
| J1.1. Second Respondent’s Name |  |  |
| J1.2. Second Respondent’s Role in the farm/firm |  | 1=Owner/investor, 2=Manager/Caretaker, 3=Others (specify) |
| J1.3. Second Respondent tel. number |  |  |
| J1.4. Second phone number |  |  |
| J1.5. What is the second respondent’s gender? *(the enumerator can just fill this out)* |  | 1=Male, 0=Female |
| J1.6. Age of second respondent? (rough estimate is fine) |  |  |
| J1.7. What is your highest educational level of second respondent? |  | 1=No schooling / 2 = Primary school / 3 = Junior Secondary School / 4 = Technical or vocational (after junior high) / 5 = Senior Secondary School / 6 = Polytechnic (after senior high) / 7 = University or College / 8 = Postgraduate or Master’s Degree / 9 = Doctorate Degree / 10 = Other (specify) |
| J1.8. What is your religion? |  |  |

**J2. Inputs to production decisions (to be answered by BOTH female and male respondents separately)**

| Now I’d like to ask you some questions about your participation in tilapia farming. | | Did you participate in [ACTIVITY] in the past 12 months? | How much input did you have in making decisions about [ACTIVITY]?  **USE CODE J2↓** | How much input did you have in decisions about how to use the outputs or income generated from [ACTIVITY]?  **USE CODE J2↓** |
| --- | --- | --- | --- | --- |
| **ACTIVITY** | | **J2.01** | **J2.02** | **J2.03** |
|  |  |
| **A** | **Fingerling production** | Yes…...1  No…….0 🡪 ***activity B*** |  |  |
| **B** | **Fingerling purchases** |  |  |  |
| **C** | **Tilapia culture (production)** |  |  |  |
| **D** | **Tilapia marketing and trading** |  |  |  |
| **E** | **[Crop farming** |  |  |  |
| **F** | **Other non-farm business activities** |  |  |  |

| **CODE J2: INPUT IN DECISION** |
| --- |
| **READ ALOUD**  LITTLE TO NO INPUT IN DECISIONS 1  Input into some decisions 2  Input into most OR ALL decisions 3  NOT APPLICABLE / NO DECISION MADE 98 |

**J3. Ownership of assets**

Table J3.B. Now I’d like to ask you about a number of items that could be used to generate income. **(to be answered by BOTH female and male respondents separately)**

|  | | Does anyone in your household currently have any [ITEM]?  YES……..1  NO………0 🡪 ***next item*** | Do you own [ITEM] yourself?  **READ OUT LOUD.**  **CIRCLE ONE**  YES, SOLELY 1  YES, JOINTLY 2  YES, SOLELY AND JOINTLY 3  NO 4 | Whose name is on the title, registration or other document of the [ITEM]?  **USE CODE J1**  **SELECT UP TO 2 PERSONS WITH THE PRIMARY DECISION MAKER LISTED FIRST.**  DON’T KNOW 97  NOT APPLICABLE….…98  **IF NO TITLE / DOCUMENT USE CODE 98** | | Who would you say can decide whether to sell, give away, mortgage, rent or purchase a new [ITEM] most of the time?  **USE CODE J1**  **SELECT UP TO 2 PERSONS WITH THE PRIMARY DECISION MAKER LISTED FIRST.**  NOT APPLICABLE / NO DECISION MADE….…98 | |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ITEM** | | **J3.01** | **J3.02** | **J3.03** | | **J3.04** | |  | |
|  | |  |  | **a** | **b** | **A** | **b** |  |  |
| **A** | Fish pond (if pond farm) |  |  |  |  |  |  |  |  |
| **B** | Fishing boats/canoes for fishing or transportation |  |  |  |  |  |  |  |  |
| **C** | Land or facilities used for aquaculture business |  |  |  |  |  |  |  |  |
| **D** | Equipment or materials used for aquaculture business |  |  |  |  |  |  |  |  |
| **E** | Agricultural land |  |  |  |  |  |  |  |  |

| **CODE J1: DECISION MAKERS** |
| --- |
| **SELECT UP TO 2 PERSONS WITH THE PRIMARY DECISION MAKER LISTED FIRST:**  SELF 1  SPOUSE (OR PARTNER) IN HH 2  SPOUSE (OR PARTNER) OUTSIDE HH 3  OTHER HH MEMBER 4  NON-HH MEMBER, RELATIVE 5  NON-HH MEMBER, NO RELATION 6  government or other institution 7  CLAN (GROUP OF RELATIVES) 8  NOT APPLICABLE / NO DECISION MADE 98 |

Table J3.C. Which of the following assets does the household own and which do you own yourself?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | J3.06. | J3.07. | J3.08 | J3.09 | | J3.10 |  | J3.11 |  | |  | |  |
|  | **To ask to main respondent ONLY** | | | | | **To ask both male and female respondents separately** | | | | | | | | |
|  | Asset | Number owned in 2019 | Number owned in 2014 (5 years ago) | If you were to sell this today, what is the value **per unit?** (GHS) | Do you own [ITEM] yourself?  **READ OUT LOUD.**  **CIRCLE ONE**  YES, SOLELY 1  YES, JOINTLY 2  YES, SOLELY AND JOINTLY 3  NO 4 | | Whose name is on the title, registration or other document of the [ITEM]?  **USE CODE J1**  **SELECT UP TO 2 PERSONS WITH THE PRIMARY DECISION MAKER LISTED FIRST.**  DON’T KNOW …97  NOT APPLICABLE….…98  **IF NO TITLE / DOCUMENT USE CODE** | | Who would you say can decide whether to sell, give away, mortgage, rent or purchase a new [ITEM] most of the time?  **USE CODE J1**  **SELECT UP TO 2 PERSONS WITH THE PRIMARY DECISION MAKER LISTED FIRST.** NOT APPLICABLE / NO DECISION MADE 98  ….…98 | | |  | | |
|  |  |  |  |  |  | | **a** | **b** | **a** | | **b** |  |  | |
| 1 | Truck |  |  |  |  | |  |  |  | |  |  |  | |
| 2 | SUV |  |  |  |  | |  |  |  | |  |  |  | |
| 3 | Saloon car |  |  |  |  | |  |  |  | |  |  |  | |
| 4 | Motorbike |  |  |  |  | |  |  |  | |  |  |  | |
| 5 | Bicycle |  |  |  |  | |  |  |  | |  |  |  | |
| 6 | Air con |  |  |  |  | |  |  |  | |  |  |  | |
| 7 | Refrigerator |  |  |  |  | |  |  |  | |  |  |  | |
| 8 | Cold chain |  |  |  |  | |  |  |  | |  |  |  | |
| 9 | TV Set |  |  |  |  | |  |  |  | |  |  |  | |
| 10 | Radio |  |  |  |  | |  |  |  | |  |  |  | |
| 11 | Generator |  |  |  |  | |  |  |  | |  |  |  | |
| 12 | Water pump |  |  |  |  | |  |  |  | |  |  |  | |
| 13 | Water tank |  |  |  |  | |  |  |  | |  |  |  | |
| 14 | Borehole/protected well |  |  |  |  | |  |  |  | |  |  |  | |
| 15 | Large livestock (e.g., oxen and cattle) |  |  |  |  | |  |  |  | |  |  |  | |
| 16 | Small livestock (e.g., goats, pigs, sheep) |  |  |  |  | |  |  |  | |  |  |  | |
| 17 | Poultry (e.g., chicken, guinea fowl, ducks, turkey) |  |  |  |  | |  |  |  | |  |  |  | |
| 18 | Cellphone |  |  |  |  | |  |  |  | |  |  |  | |

**SECTION J4: ACCESS TO CREDIT** **(to be answered by BOTH female and male respondents separately)**

J4.1. Did anyone in your household ever apply for a loan or credit (in cash or in-kind) to support your **crop or fish farming or any economic activities** in the last two years (2017-2019), either from friends, family, moneylenders, buyers, association, bank, and other financial institutions?

J4.2. Specifically for **fish farming (or hatchery)**, did anyone in your household ever apply for a loan or credit (in cash or in-kind) to support your fish farming in the last two years (2017-2019), either from friends, family, moneylenders, buyers, association, bank, and other financial institutions? 1= Yes 0 =No [if yes, go to Table J4.A; if no, skip Table J4.A]

J4.4. [ask to all] Would you or anyone in your household be able to take a loan or borrow cash/in-kind from any source if you wanted to?

YES...…….1 🡪 go to J4.5

NO………..2 🡪 J4.5. Why?

MAYBE.….3 🡪 J4.5. Why?

J4.5.[ask to all] An account can be used to save money, to make or receive payments, or to receive wages or financial help. Do you yourself have an have an account?

Read out loud

YES, SOLELY 1

YES, JOINTLY 2

YES, SOLELY AND JOINTLY 3

NO 4

Table J4.A. **[IF J4.2 is YES]** Please list all persons, groups or institutions (either from friends, family, moneylenders, buyers, association, bank, and other financial institutions) to whom your household applied for a loan in 2017-2019

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | From whom did you attempt to get loan or credit (in cash or in kind) for fish farming?  *(Lender code)* | Did you get the loan?  ***1=Yes***  ***2=No🡪 go to next potential lender (next line)*** | If I6=1,  What was the **value of this loan/credit** (principal only, **excluding interest)** (**GHS equivalent** if it **was in-kind**)? *(GHS****)*** | What is the interest rate per year? (%) | Was **collateral** **required** to obtain this loan/credit?  0 = No 🡪 next lender; 1=Yes; 2=Group security | Who made the decision to borrow and what to do with the money or item borrowed from [SOURCE] most of the time?  **USE CODE J1**  **SELECT UP TO 2 PERSONS WITH THE PRIMARY DECISION MAKER LISTED FIRST.**  NOT APPLICABLE / NO DECISION MADE….…98 | | Who is responsible for repaying the money or item borrowed from [SOURCE]?  **USE CODE J1**  **SELECT UP TO 2 PERSONS WITH THE PRIMARY DECISION MAKER LISTED FIRST.**  NOT APPLICABLE / NO DECISION MADE….…98 | |
|  | J4.6 | J4.7 | J4.8 | J4.9 | J4.10 | J4.11 | | J4.13 | |
|  |  |  |  |  |  | **A** | **b** | **a** | **b** | |
| 1 |  |  |  |  |  |  |  |  |  | |
| 2 |  |  |  |  |  |  |  |  |  | |
| 3 |  |  |  |  |  |  |  |  |  | |
| 4 |  |  |  |  |  |  |  |  |  | |

**SECTION J5: SOURCES OF INFORMATION OR EXTENSION SERVICES (to be answered by BOTH female and male respondents separately, otherwise indicated)**

J5.1. Where do your household get your fish farming advice and information from? Rank top three \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (ADVICE CODE)

ADVICE CODE: 1= FC extension agent 2= where you buy fingerlings 3= chemical shop 4=other fish farmers in the community 5= lead/ large scale farmer in the community 6=MOFA; 7= lead or model farmer in other village; 8 = FBO or cooperative 9=other NGO/Project; 10=radio; 11=TV; 12=print media; 13=other (specify)

J5.2. Who in the household gets fish farming advice and information?

USE CODE K1. SELECT UP TO THREE (3) PERSONS

J5.3. Is the main source or provider of fish farming advice or information a male or female? 1=Male 2=Female 3=both

Table J5.B. Kindly describe distance to nearest Fisheries officer or MOFA extension agent **(to be answered by main respondent only)**

|  |  |  |
| --- | --- | --- |
|  |  | Answer |
| J5.4 | Distance to nearest MOFA extension agent? |  |
| J5.5 | Distance unit? (1=km; 2=mile) |  |
| J5.6 | Gender of the extension agent? 1=male 0=female |  |
| J5.7 | Did you receive advice on aquaculture production in 2018? 1=Yes; 0=No >>> if no, proceed to J9 |  |
| J5.8 | How often did you receive advice in 2018? |  |
| J5.9 | On which technology or subject did you receive advice? (TECHNOLOGY CODE) |  |
| J5.10 | Rate the usefulness of the information provided. (1=not useful; 2= somewhat useful; 3=useful; 4=very useful) |  |
| J5.11 | Did you act on it or did you follow the advice provided? 1=YES 0= NO |  |

TECHNOLOGY CODE: 1= stocking density 2= proper feeding procedure 3= cage/pond construction 4=site evaluation and selection 5= processing and marketing of fish 6=hygienic handling of fish 7= water sampling 8= Pipe management 9= Hygienic pond care 10= other (specify)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

J5.12. How many times did a veterinarian visit your fish farm during the last year? **(to be answered by main respondent only)**

J5.13. Aside from extension agents and veterinarian above, how many other people do you yourself talk to about fish farming? \_\_\_\_\_\_\_\_

J5.14. How many fish farmers do you yourself know? \_\_\_\_\_\_\_\_

J5.15. Are you a member of groups, associations or organizations, including any informal groups or social networks you belong to discuss issues and do joint activities? 1=YES 0=NO 🡪 go to J5.17

J5.16 Are you a member of groups, associations or organizations, including any informal groups or social networks you belong to discuss issues and do joint activities **related to fish farming or marketing?** 1=YES 0=NO

J5.17. Did you receive any other support or assistance other than training or technical support on fish farming from any projects or programs in the last 5 years? 1=YES 0=NO 🡪 go to J5.20

J5.18. What program or project? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

J5.19. What type of support or assistance received on fish farming? (check all that applies) (see support code)

|  |
| --- |
| **Support code** |
| 1=Credit/loan, at subsidized rate |
| 2=Free or subsidized seed/fingerlings |
| 3=Free or subsidized feed |
| 4=Free or subsidized equipment for cage/pond construction |
| 5= Free or subsidized materials/tools |
| 6=Free or subsidized chemicals/fertilizer/drugs/hormones/vaccines |
| 7=Market facilitation |
| 8=Input packages linked to model farmer or farm demos |
| 9=Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| |  | | --- | | J5.20. How often do you listen to the radio? \_\_\_\_\_\_\_\_ (*1=Every day 2=At least once a week 3=At least once a month 4=At least once a year 5=Never)*  J5.21. Do you get agricultural advice or information from radio programs? 1=YES 0=NO | | J5.22. How often do you watch television? \_\_\_\_\_\_\_\_ (*1=Every day 2=At least once a week 3=At least once a month 4=At least once a year 5=Never)*  J5.23. Do you get agricultural advice or information from TV programs? 1=YES 0=NO | | J5.24. How often do you talk on the phone? \_\_\_\_\_\_\_\_ (*1=Every day 2=At least once a week 3=At least once a month 4=At least once a year 5=Never)*  J5.25. Do you get agricultural advice or information from phone or mobile messaging? 1=YES 0=NO | |  |

Table J5.B. Kindly describe to us any constraints in your mobility **(J5.27 – J5.31 should be answered by women only)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Place | How often do you visit [PLACE]?  EVERYDAY ...............................1  EVERY WEEK AT  LEAST ONCE ..............2  EVERY 2 WEEKS AT  LEAST ONCE ..............3  EVERY MONTH AT  LEAST ONCE ..............4  LESS THAN ONCE A MONTH .5  NEVER.......................................6  ***IF RESPONDENT IS MALE*** 🡪 **NEXT PLACE** | Do you feel you would be able to visit [PLACE] if you wanted to?  YES……1  NO..……2 🡪 skip follow-up questions, and go to NEXT ***PLACE*** | Who usually decides whether you can go to [PLACE]?  **Use code J1**  If self, skip follow-up questions, and go to next place | Does your husband/partner or other household member object to you going alone to [PLACE]?  YES……1  NO..……2 🡪 skip follow-up questions, and go to NEXT ***PLACE*** | Under what circumstances would this person NOT object to your going to [PLACE]?  **CIRCLE ALL APPLICABLE**  IF I HAVE COMPANY (RELATIVES, CHILDREN)…….1  IF I CAN ARRANGE MY OWN  EXPENSES (FOR TRANSPORT)………....2  IF I DRESS ACCEPTABLY……3  OTHER (SPECIFY)…………………………4  UNDER NO CIRCUMSTANCES  WOULD I BE ALLOWED TO GO………….5 🡪 skip follow-up questions, and go to NEXT ***PLACE*** | Do these objections prevent you from going alone to [PLACE]?  YES……1  NO..……2 |
|  | J5.26 | J5.27 | J5.28 | J5.29 | J5.30 | J5.31 |
| Market / trading place |  |  |  |  |  |  |
| Visit family/relative/friends inside or outside the community |  |  |  |  |  |  |
| Temple / church / mosque |  |  |  |  |  |  |
| Public village gathering or community meeting |  |  |  |  |  |  |
| Training for NGO / programs |  |  |  |  |  |  |

**SECTION J6: Gender attitudes (to be answered by BOTH female and male respondents separately)**

The purpose of this section is to get information about existing gender attitudes relevant within the fish value chain.

|  |  |
| --- | --- |
| **J6.1** | Women should leave fish farming to the men especially if there is an able man in the household to do it |
| **J6.2**  **J6.3** | A man will be considered less of a man if his wife is involved in fish farming  It is dangerous/ risky for a woman to travel to suppliers, buyers or markets |
| **J6.4** | Women should not own fish ponds or cages, fishing nets, and other equipment and gadgets use for fish farming |
| **J6.5** | Women should primarily be the ones who clean and process fish |
| **J6.6** | Women should primarily be the ones who trade or market fish, not men |
| **J6.7** | Men should primarily be the ones who transport fish to a market for sale |
| **J6.8** | Men should primarily be the ones who control the earnings obtained from the sale of fish |
| **J6.9** | Women should primarily be the ones who prepare meals (including fish) for the family or if guests come to visit |
| **J6.10** | Men should mostly be the ones who belong to aquaculture or fisheries clubs, organizations, or associations, not women |
| **J6.11** | It brings benefit to the family to have women participate in training activities, such as aquaculture trainings |
|  | |  | | --- | |  | |

Read out loudly these options:

Strongly Agree ................................................... 1

Agree ...................................... 2

Disagree ............................................... 3

Strongly Disagree ............................................... 4

**Section J7: Time constraints (to be answered by BOTH female and male respondents, separately, otherwise indicated)**

J7.1. If you wanted to do something (livelihood-related, training-related, self-care), will you be able to reorganize your tasks so that you can make time to do it? 1=Yes 0=NO

J7.2. **[to be asked only for female respondents with children from 0-5 years old; Sena, please code in CAPI]** If you wanted to do something (livelihood-related, training-related, self-care) and could not take your child with you, is there someone who could care for your child in your absence? 1=YES 0=NO

J7.3. If you had an additional 2 hours in your day to do anything, how would you spend that time? List up to two. See activity code

|  |  |
| --- | --- |
| ACTIVITY CODE:  1………Sleeping and resting/relaxing  2...........Eating and drinking  3………Personal care  4...…….School (incl. homework)  5…....…Work as employed  6…….…Own business work  7……...More time for farming | 8…….….. Domestic work (incl. cooking, fetching water and fuel)  9…..……..Caring for children, Caring for adults (sick, elderly)  10.…..…..Traveling (not for work or school)  11………. Shopping / getting service (incl. health services)  12………...Exercising  13………..Social activities and hobbies  14…….….Religious activities  15……….Other (specify |

**Section K. Aquaculture and fish health management practices**

**[Enumerators will observe the facility/surroundings and rate]**

K1. Overall appearance or order of the facility? 1-5 scale . . . [1 (bad) ; 5 (excellent)]

K2. Has a toilet? 1=YES 0=NO

K3. Overall sanitation/hygiene (how clean the facility/surroundings)? 1-5 scale . . . [1 (bad) ; 5 (excellent)]

K4. Are there animals are around/near the facility (anything you can see)? 1=YES 0=NO

K5. Has changing room for staff/employees? 1=YES 0=No

K6. Sanitation/hygiene in the changing room? 1-5 scale . . . [1 (bad) ; 5 (excellent)]

K7. Feed storage facility (order, sanitation)? 1-5 scale . . . [1 (bad) ; 5 (excellent)]

K8. How are feeds stored? (check all that applies) 1=raise wooden platforms; 2=stacked and stored directly against wall and/or concrete floors 3=other (Specify)

K9. Has written pest control plan for feeds? 1=YES 0=NO

K10. Has storage cabinet or facility for drugs, antibiotics, hormones or chemicals? 1=YES 0=NO

K11. Has written sanitation and hygiene plan? 1=YES 0=NO