**STREAMS Consumer Survey**

Potential STREAMS Research Institutions:

1. **International Centre for Living Aquatic Resource Management (ICLARM), also known as and hereinafter referred to as “WorldFish”, and**
2. **Survey Partner Institution (SPI)**

The research project, titled ‘Sustainable Transformation of the Egyptian Aquaculture Market System’, focuses on tilapia value chains for the poor. The overall project goal is increasing supply of more affordable and more nutritious fish to poor consumers. The following terms of action are outlined to SPI partners to conduct research of market preference among low-income consumers. The WorldFish scientist accountable to these activities is Seamus Murphy, Ph.D ([s.murphy@cgiar.org](mailto:s.murphy@cgiar.org)).

Historically, fish has been an important food commodity in the diet of Egyptian consumers (Beveridge & Little, 2002: 9). Over the past three decades, Egypt’s aquaculture sector has grown rapidly. It now stands to be the world’s third largest farmed-tilapia producer (Dickson, *forthcoming*). As a result, this fish increasingly provides a critical source of animal protein to its lowest income consumers.

However, despite these recent developments, limited research is yet available regarding the links between expanding aquaculture and rates of fish consumption among poor consumers in Africa (Beveridge et al., 2013). What is more, although national fish availability has risen in Egypt, per capita fish consumption still remain below desired health standards. For example, low-income consumers on average purchase fish once per week, while low-income consumers located beyond the Lower Delta purchase fish at least once or less than once every two weeks (El Mahdi et al., 2015).  Meanwhile, concerns have been raised over the development of Egypt’s fish value chains, which are increasingly geared towards production of large sized fish that offer higher price per kilogram of product (MacFayden et al., 2012). In Egypt, where 26% of population is resource-poor, such a trajectory of market development has meant a majority of fish products remain unaffordable to the lowest-income quintile.

National-level studies also point to the significance of food subsidies in changing trends of dietary diversity among Egypt’s resource poor households. For example, reports suggest that household food baskets among the lowest income quintile are shifting toward overconsumption of high calorie, subsidized foods and under-consumption of micronutrient-rich foods (Ecker et al, 2016). What is more, these reports also indicate highest rates of child stunting and maternal obesity in governorates where fish availability and affordability are lower, such as Upper Egypt or metropolitan areas (*see also* CAPMAS, 2012).

Nonetheless, demand for low-value fish products remains high, as studies also indicate higher profitability among retailers selling smaller sized tilapia (El Mahdi et al., 2015; Toufique & Belton, 2014). Nutrition studies suggest that consumption of smaller sized fish involve different nutritional outcomes for food-insecure households. These outcomes relate to differences in intra-household allocation and sharing of nutrient-rich foods, which have been linked to varying patterns of food preparation and consumption of smaller and cheaper fish products (Andersen et al., 2016; Gittelsohn & Castine, 2003; Gordon et al., 2013; Kawarazuka, 2010). For example, Rai and others have indicated that consumers tend eat smaller sized fish whole, which involves different nutritional outcomes relating to micronutrient contents of different fish parts such as head, tail and gut (Rai et al., 2012; Roos et al., 2007; Ssebisubi, 2011; Thilsted, 2012). Others have also indicated that smaller fish tends to distributed more equitably between all family members at the dinner plate (Belton et al., 2013; Feidler et al., 2016).

Policy debates now arising caution that, while food subsidies and cheap high-calorie foods has kept child wasting below 8% since 2000, high rates of double-burden malnutrition between mother-child pairings are critically high among resource-poor households (WFP, 2013; Ahram, 2017).

According to FAO’s 2016 guideline’s for measuring dietary diversity of women and children, there are a number of questionnaire pitfalls to avoid, which relate to capturing accurately ‘open recalls’ by adopting ‘list-based methods’ that combine required food groups[[1]](#footnote-1)[1]. It explains that women of reproductive age (WRA) are often nutritionally vulnerable because of the physiological demands of pregnancy and lactation. Nutritional requirements are often higher for pregnant and lactating women than for adult men. Insufficiency of nutrients before and during pregnancy and lactation can affect both women and their infants. There remains a significant gap in research regarding dietary quality of women and children in resource-poor countries, leading to a lack of indicators for assessing intra-household nutrition security. To address this gap, the FAO’s 2016’s guidelines provide a Minimum Dietary Diversity for Women indicator, which involves food group diversity indicator designed to represent deficiencies summarized across 11 micronutrients[[2]](#footnote-2)[2]. As diet quality is multidimensional, nutritional outcomes are also influenced by local pathogens and illness factors, requiring additional questions about health histories.

The Minimum Dietary Diversity for Women indicators are analyzed across 10 food groups to assess whether respondents have consumed at least five out of ten defined foods during the previous 7 days. These food groups include:

|  |  |
| --- | --- |
| 1. Grains, white roots a nd tubers, and plantains  2. Pulses (beans, peas and lentils)  3. Nuts and seeds  4. Dairy  5. Meat, poultry and fish | 6. Eggs  7. Dark green leafy vegetables  8. Other vitamin A-rich fruits and vegetables  9. Other vegetables  10. Other fruits |

In order to comprehensively address malnutrition of maternal women and children, questions of gender norms and attitudes are also included in this survey (Stage 3). These questions relate not only to social norms regarding distribution of food at the dinner table, but also to gendered roles around income control, decision making and freedom of movement in the household and the marketplace. Responding to a growing body of literature that has come to challenge orthodox survey sampling procedures (Boozer & Goldstein, 2003; Deer et al., 2006; Doss, 2012; 2001; Fletschner, 2009; Fleschner & Mesbah, 2011; Haddinott & Haddid, 1995; Johnson et al., 2016; Udry, 1996), this survey investigates preferences and consumption patterns of different individuals within different households with varying gender relations and norms. Four key points are outlined here, which inform the STREAMS consumer research objectives. These are followed by 10 main research questions.

**Key Points:**

1. Smaller sized grade 3 tilapia remains the cheapest source of animal-based protein for resource-poor consumer markets.
2. Geographical and social disparities are evident across Egypt, where poor supply chain development affects differences in fish availability and affordability between Lower, Upper and metropolitan Egypt.
3. Lower frequency of fish purchases among these groups is significant to issues of nutrition security.
4. Gender roles within the household and marketplace are also significant to issues of nutrition security in Egypt.

**Key Questions:**

1. What do poor consumers buy, how much, at what price, where and when? What are their strategies?
2. What trends in dietary diversity can we identify from household food baskets? If negative, what risks does this involve regarding maternal and child malnutrition?
3. Are there significant differences in existing patterns of fish preparation and intra-household sharing of different tilapia sizes between low income households, in particular for tilapia of different sizes?
4. Are these differences significant geographically and/or socially?
5. How are decisions being made between men and women within resource-poor households on *buying* tilapia of different sizes of tilapia under normal conditions, in different seasons, and during festivals/holidays?
6. How are decisions being made between men and women within resource-poor households on *preparation* of different sizes of tilapia under normal conditions, in different seasons, and during festivals/holidays?
7. How are decisions being made between men and women within resource-poor households on *distribution* of different sizes of tilapia? Which parts of the tilapia are consumed by whom?
8. How are these decision-making patterns influenced by existing societal and gender norms, habits and traditions?
9. What scalable strategies can best promote behavioral change in order to achieve enhanced nutrient intake from fish, in particular among women and children in low income households?
10. Based on the above, what are the likely trends of future demand for tilapia of different sizes in low income households in Egypt?

# Survey Sampling:

This calls for a four-stage sex-disaggregated consumer survey of low-income consumer households across 7 governorates, which include Aswan, Beheira, Cairo, Fayoum, Kafr-El-Sheikh, Mineya, and Sharkia. The survey will follow the CGIAR Sex-Disaggregated Survey Standards[[3]](#footnote-3)[3], which inform sampling procedures, units of analysis and informant-interviewer interactions. The survey will be designed using mixed methods approaches, semi-structured questionnaires and a stratified, purposive sampling design. The stratified sampling will involve two samples, which will be selected proportionately from five sub-groups who are identified from among Egypt’s lowest income quintile groups.

These five groups include:

* Females in male-headed households.
* Males in female-headed households.
* Females in female-headed households.
* Males in male-headed households.
* Male/female respondents who are single, divorced, separated or widowed.

To assist accurate sampling, the following eight questions will be used for screening households. These screenings have been developed from previous consumer surveys implemented in 2013. They are provided to enumerators to help identify resource-poor households. Those households agreeing to five out of eight of the following questions are to be included in the survey:

* Head of household does not have social security.
* Ratio of workers within the household is less than 0.25.
* Family lives in one room only, or member share of the rooms is less than 0.5 rooms.
* There is no private bathrooms in the residence (in urban areas).
* Electricity consumption is less than EGP 20 per month.
* The family does not have a landline.
* The type of floors is bare concrete.
* No child is receiving private education/tuition.

Household questionnaires will be recorded using open-data-kit software. Tablets will be recharged daily and each Thursday data will be uploaded to online folders for crosschecking by data administrator and principal investigators. Interviews for stages 2 & 3 are designed to be semi-structured and will be recorded using voice recorders, before being transcribed and coded according to categorical responses. The survey will also be accompanied with life-size reference pictures of fish to assist accurate estimates.

To offer resources for longitudinal study of shifting food baskets, datasets available are found in the 2013 National Household Income and Expenditure (CAPMAS), which provides panel data for 253 households in Aswan, 992 in Behera, 1642 in Cairo, 522 in Fayoum, 536 in Kafr-El-Sheikh, 831 in Mineya, 1131 in Sharkia. A further 11 panel datasets have been recorded by CAPMAS in 1955, 1958, 1964, 1974, 1981, 1990, 1995, 1999, 2004, 2008 and 2010. The survey’s four stages are designed as follows:

* Stage 1 will survey one individual from 700 households spread across the 7 governorates. Adopting a ‘7-day recall’, these stages will investigate household income and expenditures, which will disaggregate expenditures between food and non-food items. This data will inform percentages of expenditures on food baskets, indicating household vulnerability to price changes and food insecurity. These questions will also investigate purchases of different fish items and examine quantity and frequency of fish products purchased per household.
* Stage 2 & 3 will survey one individual from among 700 households, spread across the 7 governorates. These stages will first investigate perceptions of different fish products in terms of price, specie, size, source of retail purchase and source of fish production. Next, they will investigate food preparation and consumption behavior within the household, by assessing the different ways fish is cooked by different households and how meals are distributed between family members. Following this, questions will investigate gender relations and attitudes within the household. These questions, which will investigate intra-household gender roles in relation to decision-making, income control, access to credit, time-poverty and women’s freedom of movement, will be measured in relation to women’s empowerment indexes.
* Stage 4 will involve anthropometric measurement of between 2 & 3 households members, which will include mother and one or two children under the age of five.  This data will be measured in relation to nutritional indexes, measuring body mass indexes and height-for-age z-scores. Height-for-age and body-mass z-scores will be assessed in relation to nutritional indexes based on WHO Growth Standards of 2010 and Egypt’s National Health Survey of 2014 (DHS, 2014:174-175). Data needed to compile BMI indicators include measurements of height in centimeters (supine length for under 2 years/ standing height for over 5years), body weight in kilograms, sex, and respondent’s age. Based on WHO Child Growth Standards (de Onis et al., 2006), children under five are assessed for undernutrition and overweight status by calculating percentage of low or high weight-for-age and height-for-age scores. Low weight-for-age and low height-for-age scores are defined as less than two standard deviations below the median of the WHO Child Growth Standards. High weight-for-age scores are defined as more than two standard deviations above the same standards. For example:
  + **% underweight children = (Numerator/denominator) X 100.**

Numerator: number of children under five with weight-for-age below -2SD.

Denominator: total number of children under five weighed.

* + **% stunted children = (Numerator/denominator) X 100.**

Numerator: number of children under five with height-for-age below -SD.

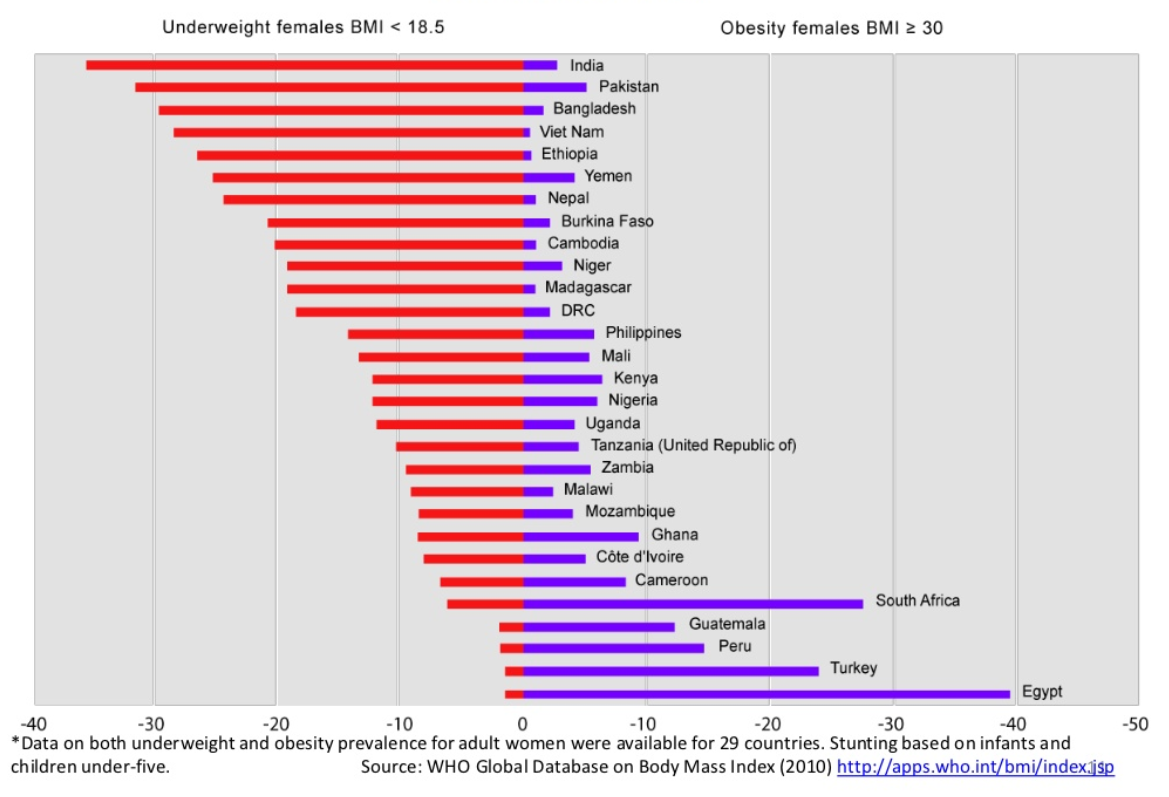
Denominator: total number of children under five measured.

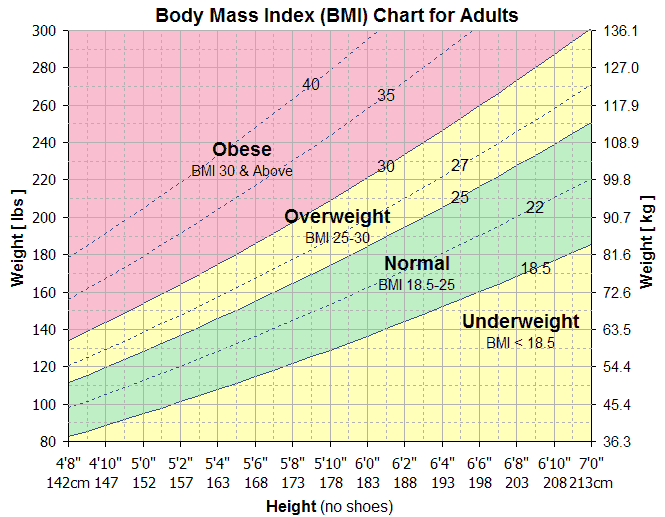
* + **% overweight children = (Numerator/denominator) X 100.**

Numerator: number of children under five with high weight-for height above +2SD.

Denominator: total number of children under five measured.

Adult BMI scores are age-independent. Given Egypt’s food market environment and state subsidy system, which contributes to its staple-heavy dietary context, maternal obesity remains a key adult nutrition indictor. A 2010 WHO study suggests that among the 36 highest stunting-burden countries, Egypt experiences greatest rates of maternal obesity (Figure 1). An example of population distribution of BMI scores is provided in Figure 2 below.

**Figure 1:** 

**Figure 2:**

**Survey Timeline:**

Implementation of consumer surveys will be conducted within the second and third quarters of 2017. Primary data collection will be concluded by August 15th. Collation and data validation will be finalized by September 1st.  July. Final analysis will be completed and delivered to WorldFish September 15th 2017 as survey report and key findings per governorate and quantitative and qualitative study samples.

# Stage 1; Household Income & Expenditure (1 month recall)      Date:\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **Respondent ID** |  |
| Household Identification Number (001 – 700) |  |
| Name of Interviewer |  |
| Name of Interviewee/respondent |  |
| Village/ Neighbourhood |  |
| Governorate |  |
| Mobile phone number |  |

**Household Characteristics (code lexicon below)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Sl. No. (Respondent ID) | Name | Relation  with  hh head  (**Code-1**) | Gender  1 = Male  2 = Fem. | Age | Marital Status (**Code-2**) | Education (Number of Years) | Occupation (**Code-3**) |
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**Code-1:** (**Relation**)

**1.** HH head                          **2.** Wife/husband                              **3.** Son/daughter               **4.** Father/mother

**5.** Brother/sister               **6.** Son/daughter-in-law                 **7.** Grand son/daughter  **8.** Nephew/niece

**9.** Brother/sister-in-law               **10.** Brother’s wife/sister’s husband                          **11.** Others (specify)

**Code-2:** (**Marital status**)

**1.** Unmarried                    **2.** Married          **3.** Widow/widower        **4.** Divorced        **5.** Separated

**Code-3: (Occupation)**

**1.** Farming                           **2.** Wage Labor                   **3.** Salaried worker            **4.** Self-employment (specify)

**5.** Livestock, Poultry       **6.** Fishery related             **7.** Trader (specify)           **8.** Shopkeeper

**9.** Unpaid Labour              **10.** Unemployed

**1. Household Monthly Income (1 month recall)**

| **Q. No.** | **Source of Income** | **Gross income per month (EGP)** | |
| --- | --- | --- | --- |
|  | **Agriculture** |  | |
| 1.1 | Crop |  | |
| 1.2 | Livestock |  | |
| 1.3 | Poultry |  | |
| 1.4 | Fish |  | |
| 1.5 | Vegetables |  | |
| 1.6 | Others |  | |
|  | **Non-farm income sources** |  | |
| 1.7 | Service/Labor selling (code 5.5.7 below)[[4]](#footnote-4)\* | \* |  |
| 1.8 | Renting (code 5.5.8\*) | \* |  |
| 1.9 | Business (code 5.5.9\*) | \* |  |
| 1.10 | Self-employment (code 5.5.10\*) | \* |  |
| 1.11 | Others (Please specify\*) | \* |  |

**Code 1.7:**

1. Civil service    2. Remittance    3. Private enterprise       4. Industrial Labour         5. Agri Labour

**Code 1.8:**

1. Taxi service    2. Vehicle rental                3. Hardware rental         4. Construction 5. Fishing net rental

6. Tailor                7. Land rental                    8. Property mortgaged  9. Money lending

**Code 1.9:**

1. Medium or large-scale enterprise                                        2. Small-scale enterprise/street trader

**Code 1.10:**

1. Driver               2. Taxi Services                 3. Handicrafts                    4. Construction                 5. Tailor

**2. Monthly Household Expenditures (1-month recall)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Q. No.** | **Items** | **Monthly Expenditures (EGP)** | **Q. No.** | **Items** | **Monthly Expenditures (EGP)** |
| 2.1 | Food |  | 2.9 | House rent |  |
| 2.2 | Clothing |  | 2.10 | Loan repayment |  |
| 2.3 | Education |  | 2.11 | Land purchase |  |
| 2.4 | Health |  | 2.12 | Land rent |  |
| 2.5 | House repair/building |  | 2.13 | Livestock/poultry |  |
| 2.6 | Transport Expenses |  | 2.14 | Agricultural inputs |  |
| 2.7 | Farm equipment |  | 2.15 | Festivals, ceremonies. marriage |  |
| 2.8 | Fuel (Firewood, gas, charcoal, kerosene etc.) |  | 2.16 | Cosmetics |  |

**3. Weekly Food Expenditures (7-day recall)**

|  |  |
| --- | --- |
| **Item** | **Monthly Cost (EGP)** |
| 3.1 Rice |  |
| 3.2 Grain & Flour |  |
| 3.3 Bread & Cakes |  |
| 3.4 Pasta |  |
|  |  |
| 3.6 Sheep/Goat Meat |  |
| 3.7 Beef |  |
| 3.8 Chicken |  |
| 3.9 Fish/Seafood |  |
| 3.10 Milk/Yoghurt |  |
| 3.11 Cheese |  |
| 3.12 Eggs |  |
| 3.13 Cooking Oil |  |
| 3.14 Butter/Margarine |  |
| 3.15 Fruits |  |
| 3.16 Vegetables |  |
| 3.17 Sugar |  |
| 3.18 Spices |  |

1. **Weekly Fish Expenditures (7 day recall)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Fish Species** | **Size of Fish Piece.** | **Product Type (live, fresh, frozen, fried, smoked, filleted)** | **Quantity (kg)** | **Price/kg** |
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1. **Dietary Diversity of Mother/ Woman (24 hour recall)**

*Enumerator: Record discussions of foods eaten on a separate page. When complete, fill in the food groups table below. Make sure to generate discussion of each time period during that day;* ***‘*Think about when [NAME] first woke up yesterday. Did [NAME] eat anything at that time?’ IF YES: Please tell me everything [NAME] ate at that time. Probe: Anything else? Until the respondent says nothing else, continue to question b (morning snacks, and so on and so on)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Breakfast | Morning Snacks | Lunch | Afternoon Snacks | Dinner | Late night snacks |
|  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Type of food** | **Examples** | **Yes** | **No** | **Don’t know** |
| 1 | CEREALS | Bread, rice, wheat, corn, or any other grains or foods made from these (flour, other products containing cereals) | 1 | 0 | 7 |
| 2 | WHITE ROOTS, TUBERS, AND PLANTAINS | White potatoes, yams, other foods made from roots | 1 | 0 | 7 |
| 3 | DARK GREEN LEAFY VEGETABLES | Spinach, sweet potato leaves, or other green leaves | 1 | 0 | 7 |
| 4 | VITAMIN A RICH VEGETABLES AND TUBERS | Pumpkin, carrot | 1 | 0 | 7 |
| 4a | Orange sweet potato | Orange sweet potato | 1 | 0 | 7 |
| 5 | OTHER VEGETABLES | Tomato, eggplant etc. | 1 | 0 | 7 |
| 6 | VITAMIN A RICH FRUITS | Ripe mango, ripe papaya, fruit juice from these | 1 | 0 | 7 |
| 7 | OTHER FRUITS | Bananas, jackfruit, oranges, apples, melon, lemon, other fruits | 1 | 0 | 7 |
| 8 | ORGAN MEAT | Liver, kidney, heart, or other organ meets or blood-based foods | 1 | 0 | 7 |
| 8a | POULTRY MEATS- Chicken, ducks, koel & other birds | Chicken, ducks, & other birds | 1 | 0 | 7 |
| 8b | Other FLESH MEATS | Mutton, lamb, beef, pork or other animal meat | 1 | 0 | 7 |
| 9 | EGGS | Egg from chicken, duck, or other birds | 1 | 0 | 7 |
| 10 | Small fish | Grade 2/3 tilapia | 1 | 0 | 7 |
| 10a | Large fish (catfish) | Catfish, nile perch, grade 1 tilapia | 1 | 0 | 7 |
| 10b | Other Fish | Please specify | 1 | 0 | 7 |
| 11 | BEANS, PEAS, PULSES | lentils, peanuts, cowpeas, french beans, or other foods made from these | 1 | 0 | 7 |
| 12 | NUTS AND SEEDS | Any tree nuts, groundnuts/ peanuts etc, or other foods made from these | 1 | 0 | 7 |
| 13 | MILK AND MILK PRODUCTS | Milk, yoghurt, cheese, other milk products | 1 | 0 | 7 |
| 14 | OILS AND FATS | Vegetable oil, corn oil, ghee, animal fat, margarine or other oil/fat added to food or used for cooking | 1 | 0 | 7 |
| 15 | SWEETS | Sugar, sugar cane, honey, sweetened soda, sugary drinks, chocolate, candies, biscuits, cakes | 1 | 0 | 7 |
| 16 | SPICES, CONDIMENTS, BEVERAGES | Spices (chili powder, other spice), condiments (hot sauce), coffee, tea | 1 | 0 | 7 |

**7.1. If woman reported fish consumption yesterday (24-hour recall);**

Which were the fish species? How much fish did you consume, what were the types of fish and what were the sources of fish?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl** | **Name of Fish species** | **Consumed**  (in grams) | **Fish Preparation**  1=Fried  2=Grilled  3=Cooked with spices/relish | **Sources of Fish**  1=Own production  2=Captured from open sources (Nile/lake)  3=Received as gift from others  4=Market  5=Don’t know |
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**7.2. How many days over the last 7 days did you consume fish?**                       (# days)

**7.3. How many times over the last 7 days did you consume fish?**                     (# times)

1. **Dietary diversity of children between 6 and 23 months of age (24hr recall)**

Name of child \_\_\_\_\_\_\_\_\_\_          Age of the child \_\_\_\_ (months)  Sex \_\_\_ 1=Boy, 2=Girl

*Enumerator: Record foods eaten on a separate page. When complete fill in the food groups table below. Make sure to generate discussion of each time period during that day;* ***‘Think about when [NAME] first woke up yesterday. Did [NAME] eat anything at that time?’ IF YES: Please tell me everything [NAME] ate at that time. Probe: Anything else? Until the respondent says nothing else, continue to question b (morning snacks, and so on and so on)***

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Breakfast | | Morning Snacks | Lunch | | Afternoon Snacks | Dinner | | Late night snacks | |
|  | |  |  | |  |  | |  | |
|  |  | | |  | | |  |  |  |
|  | **Type of food** | | | **Examples** | | | **Yes** | **No** | **Don’t know** |
| 1 | CEREALS | | | Bread, rice, wheat, corn, or any other grains/foods from these (flour, other products containing cereals) | | | 1 | 0 | 7 |
| 2 | WHITE ROOTS, TUBERS, AND PLANTAINS | | | White potatoes, yams, other foods made from roots | | | 1 | 0 | 7 |
| 3 | DARK GREEN LEAFY VEGETABLES | | | Spinach, sweet potato leaves, other green leaves | | | 1 | 0 | 7 |
| 4 | VITAMIN A RICH VEGETABLES AND TUBERS | | | Pumpkin, carrot | | | 1 | 0 | 7 |
| 4a | Orange sweet potato | | | Orange sweet potato | | | 1 | 0 | 7 |
| 5 | OTHER VEGETABLES | | | Tomato, eggplant etc. | | | 1 | 0 | 7 |
| 6 | VITAMIN A RICH FRUITS | | | Ripe mango, ripe papaya, fruit juice from these | | | 1 | 0 | 7 |
| 7 | OTHER FRUITS | | | Bananas, oranges, apples, melon, lemon, other fruits | | | 1 | 0 | 7 |
| 8 | ORGAN MEAT | | | Liver, kidney, heart, or other organ meets or blood-based foods | | | 1 | 0 | 7 |
| 8b | POULTRY MEATS- Chicken, ducks, koel & other birds | | | Chicken, ducks, & other birds | | | 1 | 0 | 7 |
| 8a | Other FLESH MEATS | | | Mutton, lamb, beef, pork or other animal meat | | | 1 | 0 | 7 |
| 9 | EGGS | | | Egg from chicken, duck, or other birds | | | 1 | 0 | 7 |
| 10 | Small Fish | | | Grade 2/3 tilapia | | | 1 | 0 | 7 |
| 10a | Large Fish | | | Catfish, Nile Perch, Grade 1 tilapia | | | 1 | 0 | 7 |
| 10b | Other Fish | | | Please specify | | | 1 | 0 | 7 |
| 11 | BEANS, PEAS, PULSES | | | lentils, peanuts, cowpeas, French beans, or other foods made from these | | | 1 | 0 | 7 |
| 12 | NUTS AND SEEDS | | | Any tree nuts, groundnuts/ peanuts etc, or other foods made from these | | | 1 | 0 | 7 |
| 13 | MILK AND MILK PRODUCTS | | | Milk, yoghurt, cheese, other milk products | | | 1 | 0 | 7 |
| 14 | OILS AND FATS | | | Vegetable oil, corn oil, ghee, animal fat, margarine or other oil/fat added to food or used for cooking | | | 1 | 0 | 7 |
| 15 | SWEETS | | | Sugar, sugar cane, honey, sweetened soda, sugary drinks, chocolate, candies, biscuits, cakes | | | 1 | 0 | 7 |
| 16 | SPICES, CONDIMENTS, BEVERAGES | | | Spices (chili powder, other spice), condiments (hot sauce), coffee, tea | | | 1 | 0 | 7 |
|  |  |  |  |  |  |  |  |  |  |

**9.1. If child consumed fish yesterday (24 hour recall):**

Which were the fish species? How much fish did s/he consume, what were the types of fish and what were the sources of fish?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl** | **Name of Fish species** | **Consumed**  in gram | **Type of Fish**  1=Fried  2=Grilled  3=Cooked with spices/relish | **Sources of Fish**  1=Own production  2=Captured from open sources  3=Received/ gifted from others  4=Market  5=Don’t know |
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|  |  |  |  |  |

**9.2. How many days over the last 7 days did the child consume fish?           (# days)**



**9.3. How many times over the last 7 days did the child consume fish?        (# times)**

# Stage 2; Fish Preferences                                                                      Date:\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Respondent ID** | | | | |  |
| Household Identification Number (001 – 700) | | | | |  |
| Name of Interviewer | | | | |  |
| Name of Interviewee/respondent | | | | |  |
| Village/ Neighbourhood | | | | |  |
| Governorate | | | | |  |
| Mobile phone number | | | | |  |
| Relation  with  hh head  (**Code-1**) | Gender  1 = Male  2 = Fem. | Age | Marital Status (**Code-2**) | Education (Number of Years) | Occupation (**Code-3**) |
|  |  |  |  |  |  |

**Code-1:** (**Relation**)

**1.** HH head                                                          **2.** Wife/husband                              **3.** Son/daughter

**4.** Father/mother                                              **5.** Brother/sister                              **6.** Son/daughter-in-law

**7.** Grand son/daughter                                   **8.** Nephew/niece                             **9.** Brother/sister-in-law

**10.** Brother’s wife/sister’s husband           **11.** Others (specify)

**Code-2:** (**Marital status**)

**1.** Unmarried                                                    **2.** Married                                          **3.** Widow/widower

**4.** Divorced                                                        **5.** Separated

**Code-3: (Occupation)**

**1.** Farming                                                        **2.** Wage Labor                                   **3.** Salaried worker

**4.** Self-employment (specify)                       **5.** Livestock, Poultry                        **6.** Fishery related

**7.** Trader (specify)                                           **8.** Shopkeeper                                  **9.** Unpaid Labour

**10.** Unemployed

**10. Which fish species and sizes do you prefer?** (Make sure to probe each answer, asking why one is preferred over the other. If there is pause in discussion, enumerator can prompt discussions of specific characteristics of the food product such as taste, flesh texture, bone/fillet ratio, head, skin, colour, processed or unprocessed, cooking habits, price, food safety etc)**.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Rank** | **Fish** | **Size (Small, Medium, Big)** | **Reason** |
| **1** |  |  |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **4** |  |  |  |
| **5** |  |  |  |

**11. What traits of Tilapia you prefer? [ 10 most important – 1 least important]**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Tilapia Traits | 1–10 | Grade 1 | Grade 2 | Grade 3 | Grade 4 |
| **11.1 Size** |  |  |  |  |  |
|  |  | Long | Medium | Short | Stumpy |
| **11.2 Body Length** |  |  |  |  |  |
|  |  | Fat | Medium | Slim | Skinny |
| **11.3 Body Width** |  |  |  |  |  |
|  |  | Tough flesh | Medium hold | Soft hold | Delicate flesh |
| **11.4 Flesh** |  |  |  |  |  |
|  |  | Large head | Medium head | Small head | Very small head |
| **11.5 Head Size** |  |  |  |  |  |
|  |  | Large tail | Medium tail | Small tail | Very small tail |
| **11.6 Tail Size** |  |  |  |  |  |
|  |  | Long spikey fins | Medium fins | Small fins | Very small fins |
| **11.7 Moisture** |  |  |  |  |  |
|  |  | Please describe the taste you like/dislike | | | |
| **11.8 Taste** |  |  | | | |
|  |  | We fry tilapia in oil | We boil tilapia | We fillet tilapia | We like tilapia soup |
| **11.9 Cooking** |  |  |  |  |  |
|  |  | We don’t like bones | We like bones | We love bones |  |
| **11.10 Fish Bones** |  |  |  |  |  |

**12. Where do you like to buy Tilapia from? [10 favorite – 1 least favorite]. (**Make sure to probe each answer, asking why one is preferred over the other. If there is pause in discussion, enumerator can prompt discussions of specific characteristics of the food product such as taste, flesh texture, bone/fillet ratio, head, skin, colour, processed or unprocessed, cooking habits, price, food safety etc.).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **12.1 Preferred market source** | Farmer  (10- 1) | Wholesaler  (10 – 1) | Retailer  (10 – 1) | Street Vendor  (10 – 1) | Fisher  (10 – 1) | Do not buy/eat fish |
|  |  |  |  |  |  |
| **12.1.1 Please elaborate on your reasons** |  | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **12.2 Preferred market product** | Whole Fresh  (10 – 1) | Frozen  (10 – 1) | Fried  (10 – 1) | Smoked  (10 - 1) | Filleted  (10 - 1) | Do not buy/eat fish |
|  |  |  |  |  |  |
| **12.2.1 Please elaborate on your reasons** |  | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **12.3 Preferred origin of production** | Fish Farms  (10 – 1) | Lakes | Nile | Marine fishery | Imported fish | Do not buy/eat fish |
|  |  |  |  |  |  |
| **12.3.1 Please elaborate on your reasons.** |  | | | | | |

**13. Why do you purchase or not purchase Tilapia from the market?**

|  |  |
| --- | --- |
| **Attributes** | **Importance from 10 to 1 on the Likert scale;**  **(10 extremely important - 1 not at all important).** |
| 13.1 Tilapia is cheap |  |
| 13.2 The retail space is clean, hygienic and has fridge |  |
| 13.3 The retailer uses ice |  |
| 13.4 Tilapia is nutritious |  |
| 13.5 The trader travels to my house or street |  |
| 13.6 The retail marketplace is near my house |  |
| 13.7 The retail marketplace is too far from my house |  |
| 13.8 Filleting is available at market |  |
| 13.9 Market season is good |  |
| 13.10 The market hours are good |  |

**14. Perceptions of eating tilapia from the market? [10 strongly agree – 1 strongly disagree]**

|  |  |
| --- | --- |
| 14.1 Tilapia is good for the brain |  |
| 14.2 Tilapia is good for the heart |  |
| 14.3 Tilapia is high in nutrients |  |
| 14.4 Tilapia is more nutritional than red meat |  |
| 14.5 I prefer poultry (please explain why) |  |
| 14.6 Tilapia is a good family meal |  |
| 14.7 I like to serve Tilapia when I have guests |  |
| 14.8 Children <1 year should eat tilapia |  |
| 14.9 Tilapia is best sold when live |  |
| 14.10 Tilapia is best sold when cold |  |
| 14.11 I would buy more Tilapia if it was better quality |  |
| 14.12 Tilapia is easy to find in nearby markets |  |
| 14.13 Tilapia is easy to find once a week |  |
| 14.14 It is possible to get sick from rotten fish? |  |
| 14.15 I have been sick from eating farmed fish (please explain when, where and how) |  |
| 14.16 Wild fish is better than farmed fish (please explain why or why not) |  |
| 14.17 Traders handle Tilapia correctly (please explain how) |  |
| 14.18 Traders understand where Tilapia comes from |  |
| 14.19 Traders offer food information about Tilapia quality  (please expand) |  |
| 14.20 Because the fish I buy is certified? If yes, where, when and what product? |  |

**15.1 Questions for the Father: How many tilapia and what sizes did your family purchase last?**

*Refer to picture guide*

**15.2 Questions for the Father: How many/ or which part of the tilapia pieces did you consume?**

*Refer to picture guide*

**16.1 Questions for the Mother: How many & what sizes were last tilapia purchased by your family?**

*Refer to picture guide*

**16.2 Questions for the Mother: How many/ or which part of the tilapia pieces did you consume?**

*Refer to picture guide*

**17.1 Questions for the Child: How many and what sizes were the tilapia last purchased by your family?**

*Refer to picture guide*

**17.2 Questions for the Child: How many/ or which part of the tilapia pieces did you consume?**

*Refer to picture guide*

*(Nutritional Perceptions)*

1. Rice/bread
2. Milk
3. Fish
4. Meat/chicken
5. Eggs
6. Vegetables
7. Fruits
8. Pulses (daal)
9. Other (specify)
10. Don’t know
**18.1.      What foods are particularly important for a pregnant woman to eat to ensure a normal delivery? (allow respondents up to 4 answers)**

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**18.2.      What foods are particularly important for a lactating woman to eat to ensure sufficient breastmilk? (allow respondents up to 4 answers)**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**18.3.      What foods should be restricted during pregnancy and lactation?**

**(allow respondents up to 4 answers)**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Rice/bread
2. Milk
3. Fish
4. Meat/chicken
5. Eggs
6. Vegetables
7. Fruits
8. Pulses (daal)
9. Suji/gruel
10. Other (specify)
11. Don’t know
**18.4.      What foods does a young child (<24 months) need in order to grow and develop healthily? (allow respondents up to 4 answers)**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**18.5. Do you think children should eat fish?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**18.6. At what age should infants/children first be given fish? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (months)**

**18.7 What is your children’s favorite kind of fish and size?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Stage 3; Household Gender Roles & Attitudes                                Date:\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Respondent ID** | | | | |  |
| Household Identification Number (001 – 700) | | | | |  |
| Name of Interviewer | | | | |  |
| Name of Interviewee/respondent | | | | |  |
| Village/ Neighbourhood | | | | |  |
| Governorate | | | | |  |
| Mobile phone number | | | | |  |
| Relation  with  hh head  (**Code-1**) | Gender  1 = Male  2 = Fem. | Age | Marital Status (**Code-2**) | Education (Number of Years) | Occupation (**Code-3**) |
|  |  |  |  |  |  |

**Code-1:** (**Relation**)

**1.** HH head                                                          **2.** Wife/husband                              **3.** Son/daughter

**4.** Father/mother                                             **5.** Brother/sister                              **6.** Son/daughter-in-law

**7.** Grand son/daughter                                  **8.** Nephew/niece                             **9.** Brother/sister-in-law

**10.** Brother’s wife/sister’s husband          **11.** Others (specify)

**Code-2:** (**Marital status**)

**1.** Unmarried                                                    **2.** Married                                          **3.** Widow/widower

**4.** Divorced                                                        **5.** Separated

**Code-3: (Occupation)**

**1.** Farming                                                           **2.** Wage Labor                                   **3.** Salaried worker

**4.** Self-employment (specify)                      **5.** Livestock, Poultry                        **6.** Fishery related

**7.** Trader (specify)                                           **8.** Shopkeeper                                  **9.** Unpaid Labour

**10.** Unemployed

**19. Which family member makes decisions about buying fish and visiting the market?**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Who purchases tilapia in the market?** | Father | Mother | Joint Decision | Children | Grandfather | Grandmother |
|  |  |  |  |  |  |

**20. Answer the following statements with agree, somewhat agree or disagree**

|  |  |  |  |
| --- | --- | --- | --- |
| Potential Statements | 1-Agree | 2-Somewhat agree | 3-Disagree |
| **20.1** It is acceptable for a married woman to have her own savings |  |  |  |
| **20.2** It is acceptable for a married woman to spend her savings as she wishes to |  |  |  |
| **20.3** husband and wife should decide together on how to spend money |  |  |  |
| **20.4** Men can take care of children just as well as women can |  |  |  |
| **20.5** Women’s work is not as tiring as men’s work |  |  |  |
| **20.6** It is embarrassing for a man to help his wife with household work |  |  |  |
| **20.7** A married woman should not work outside the home if her husband is earning enough money for the family |  |  |  |
| **20.8** Women have the same right as men to work outside the homestead |  |  |  |
| **20.9** A woman is capable of being a community leader |  |  |  |
| **20.10** A woman should not leave home without permission of her husband |  |  |  |
| **20.11** Women are capable of making decisions about income expenditure by themselves |  |  |  |

**21. Tell me about household decision making in the following situations.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Decision** | **Are you consulted in these decisions?** | **Do you participate in the final decision?** | **If there is disagreement, whose opinion usually prevails** |
| **21.1** Use of your earnings | □1-Always  □2-Sometimes  □3- Never | □1-Always  □2-Sometimes  □3- Never | □1-Respondent  □ 2-spouse  □3-Other female in HH  □4-Other male in HH |
| **21.2** How total household income is spent | □1-Always  □2-Sometimes  □3- Never | □1-Always  □2-Sometimes  □3- Never | □1-Respondent  □ 2-spouse  □3-Other female in HH  □4-Other male in HH |
| **21.3** Large household purchases | □1-Always  □2-Sometimes  □3- Never | □1-Always  □2-Sometimes  □3- Never | □1-Respondent  □ 2-spouse  □3-Other female in HH  □4-Other male in HH |

**22. Time Allocation: Please calculate time spent on these activities in the last 24 hours?**

|  |  |  |
| --- | --- | --- |
| **Activities** | **Hours** | **Minutes** |
| **22**.1 Sleeping and Resting |  |  |
| **22**.2 Paid Labour |  |  |
| **22**.3 Gardening/farming/livestock |  |  |
| **22**.4 Seeking Health Care |  |  |
| **22**.5 Domestic Labour |  |  |
| **22**.6 Caring for children or elderly family |  |  |
| **22**.7 Daily travelling from to & from home |  |  |
| **22**.8 Community work or workshops |  |  |
| **22**.9 Religious activities |  |  |

# Stage 4; Nutritional Status of Mother and Child

**23. Mother Anthropometric Measurements**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **House ID** | **Name** | **Age (years)** | **Height (cm)** | **Weight (kg)** |
|  |  |  |  |  |

**24. Child 1 Anthropometric Measurements**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Sex** | **Age (months)** | **Height (kg)** | **Weight (kg)** |
|  |  |  |  |  |

**25. Child 2 Anthropometric Measurements**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Sex** | **Age (months)** | **Height (kg)** | **Weight (kg)** |
|  |  |  |  |  |

**26. Child 3 Anthropometric Measurements**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Sex** | **Age (months)** | **Height (kg)** | **Weight (kg)** |
|  |  |  |  |  |

**27. Does anyone in the family hold a food subsidy (ration) ID card?**

*If yes, please specify cost and quantity of items purchased in the last month.*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**28. Has anyone in the family purchased vitamin supplementation in the past 6 months?** *Or has anyone received supplements from NGO aid?*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**29. Has any woman in the family purchased iron or folic acid supplementation in the past 6 months?** *Or has anyone received supplements from NGO aid?*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**30. Has anyone in the family received deworming treatment in the past six months?**

*Please specify which deworming medicine.*

**Annex III:**

**Guidelines for taking anthropometric measurements of children**

1) Consent: Before measuring the child, you should explain the purpose of both the visit and the survey and obtain the consent of the mother or caretaker. It is recommended to measure children following the household survey to give time for respondents to understand the study

2) Two enumerators are required to measure a child's length/height and weight.

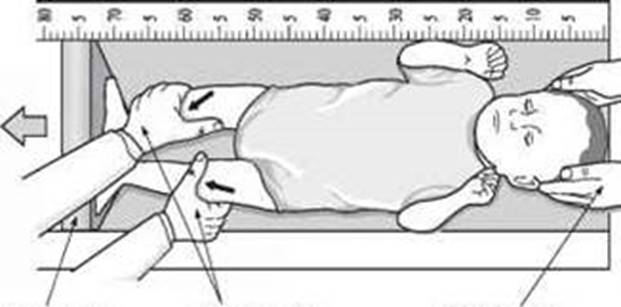
3) Instrument placement: Make sure all the pieces of the measuring board and the scale are working properly. This means calibrating the scales and installing the equipment on level ground with adequate light.

4) Weigh and measure one child at a time. If more than one child is under five years of age, then three children maximum and two children minimum should be measured

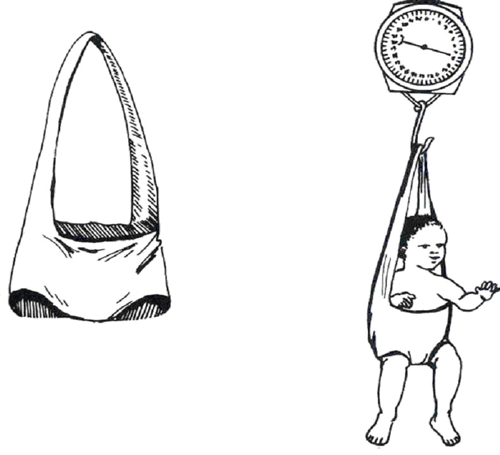
5) Seek assistance from mother to offer guidance and assurance to child during measuring. Accurate measurements will require cooperation from the mother to hold infant on the boardWhile measuring the child, you can talk to him or her, explaining the procedure, etc.

6) Use a pencil to record the measurements so that you will be able to correct mistakes. Ideally, the measurer will measure and call out the measurement while a separate person - the assistant - will record the measurement while repeating it out loud.

**Height Board for Children under 24months of age**

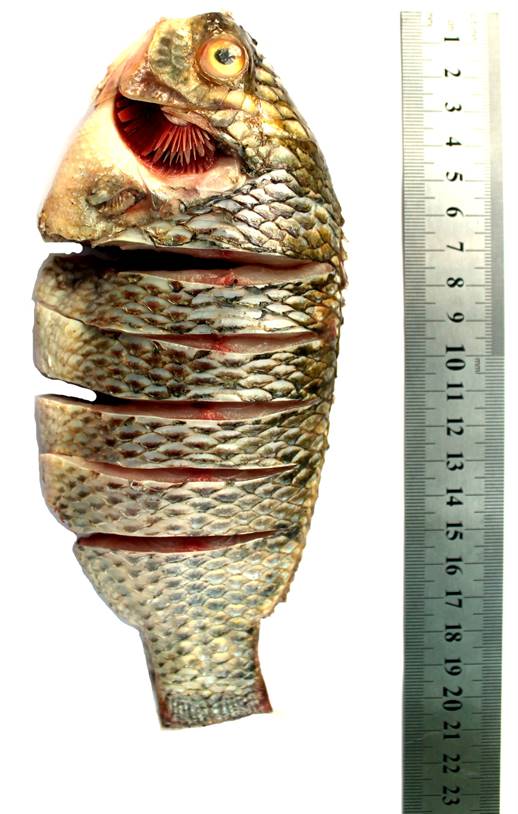
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**Weight Measurements for Children under 2 years of age**

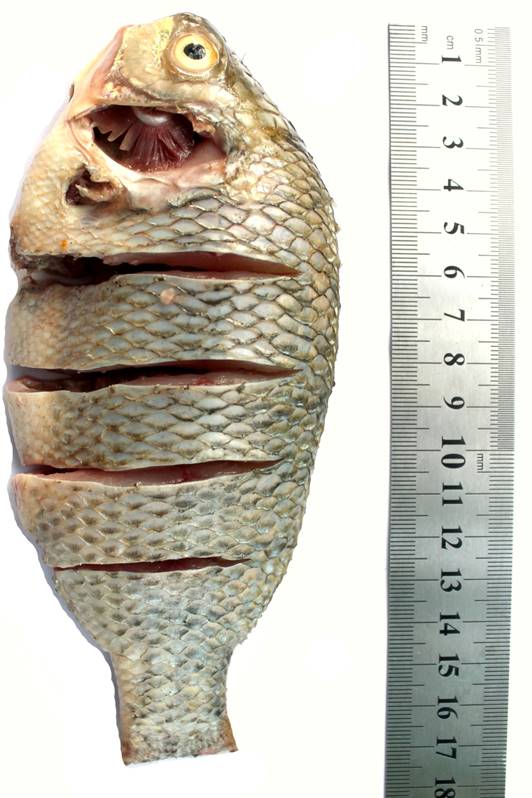
****



Tilapia Grade1 – Large Size - Avg 488.5gms

A = 98.5 gF = 34 gE = 32 gD = 29 gC = 30 gB = 30 g

Tilapia Grade 2 - Medium Size - Avg 303.5gms

A = 59 gE = 19.5 gD = 24 gC = 23 gB = 25 g

Tilapia Grade 3 – Small Size - Avg 185 gms

1. [1] FAO & USAID, 2016 ‘Minimum Dietary Diversity for Women; A Guide to Measurement’, FAO Rome; See also WHO, 20008, [↑](#footnote-ref-1)
2. [2] The 11 micronutrients were vitamin A, thiamine, riboflavin, niacin, vitamin B6, folate, vitamin B12, vitamin C, calcium, iron and zinc. See Arimond et al., 2010, and Martin-Prével et al., 2015, for the rationale for selection of micronutrients and for methods and results of a multistage research process assessing and comparing candidate indicators. See http://www.fantaproject.org/monitoring-and-evaluation/minimum-dietary-diversity-women-indicator-mddw for a description of a 2014 consensus meeting where stakeholders reviewed results and finalised indicator selection. [↑](#footnote-ref-2)
3. [3](<https://www.pim.cgiar.org/files/2012/05/Standards-for-Collecting-Sex-Disaggregated-Data-for-Gender-Analysis.pdf>) [↑](#footnote-ref-3)
4. [↑](#footnote-ref-4)