



Project Report 2012-16

# Uganda and Malawi field pilots of proposed LSMS Fisheries Module

# Summary report: Uganda and Malawi field pilots of proposed LSMS Fisheries Module

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Document prepared for the Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) project. As study to support the preparation of the Guide Book for the design of fishery modules as part of integrated household surveys in developing countries/

## **Acknowledgments**

This document was funded by The World Bank as part of the Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) project, with contribution from the WorldFish Center. The authors would like to thank Talip Kilic, Gero Carletto and Kathleen Beegle from the LSMS-ISA team for their support during the preparation and implementation of this work. The assistance of Foster Kusupa from the WorldFish Center office in Malawi is also acknowledged. Field logistics were facilitated by the help of the National Statistical Office in Malawi (Charles Chakanza) and the Uganda Bureau of Statistics (James Muwonge). Last but not least the hard work and professionalism of the two teams of enumerators with whom the pilot tests were successfully completed is greatly acknowledged.

This document should be quoted as:

Béné Christophe, Chijere Asafu D.G., Allison Edward H. and Snyder Katherine, 2010. Summary report: Uganda and Malawi field pilots of proposed LSMS Fisheries Module. Document prepared for the 'Living Standards Measurement Study-Integrated Surveys on Agriculture' project, The WorldFish Center, Penang Malaysia, 14 p + Annexes.

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## Introduction and background

This report provides detail on pilot testing of a fisheries module for living standards measurement surveys. It supports the development of the Guide Book for the design of fishery modules as part of integrated household surveys in developing countries (Béné et al 2011).

While an overwhelming majority of sub-Saharan African countries exhibit serious weaknesses in statistics pertaining to crop and livestock sectors, the deficiencies in terms of nationally-representative data on the fishery sector are even more acute. The very little data available on the sector are essentially derived from case studies of selected fisheries, and the limited nationally representative data available are generally derived from a few questions included in the livestock section of household surveys. These do not permit the detailed characterization of the fishery production systems. As a consequence in many countries the decision-makers and planners lack the most basic information about the role and importance of the fisheries sector to their national economy.

Box 1. The Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) project.

The Living Standards Measurement Study - Integrated Surveys on Agriculture (LSMS-ISA) project is an innovative household survey program established with a grant from the Bill and Melinda Gates Foundation and implemented by the Living Standards Measurement Study (LSMS) within the Development Economics Research Group at the World Bank. Under the LSMS-ISA initiative, the World Bank is supporting countries in Sub-Saharan Africa to establish systems of multi-topic, panel household surveys with a strong focus on agriculture. In each partner country, the project supports at least two rounds of nationally representative household panel data collection. In some countries, additional waves are being funded from other sources. The surveys under the LSMS-ISA are modeled on the multi-topic household survey design of the LSMS, and are designed and implemented in full collaboration with partner national statistics offices. In addition to the goal of producing policy-relevant agricultural data, the project emphasizes the design and validation of innovative survey methods, the use of technology for improving survey data quality, and the development of analytical tools to facilitate the use and analysis of the collected data. The micro-data produced under the project is fully documented and publicly available within twelve months of the completion of each survey round. Visit [www.worldbank.org/lms-isa](http://www.worldbank.org/lms-isa) for more information.

As part of an initiative called the Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) project (see Box 1), a collaboration was developed between the World Bank and the WorldFish Center to address this situation. The initiative was established on the following basis:

1. In Africa, inland and coastal fisheries are important sources of income and food for many households that rely on the rich marine resources surrounding the region and the

extensive river, lake and floodplain systems throughout the continent, to support their livelihoods.

2. A good understanding of the fishery sector and the characteristics of the households and communities involved is essential for sound policies and interventions to improve the sector, and to strengthen the role that fisheries can play in enhancing food security and alleviating poverty in sub-Saharan Africa.
3. At the present moment, fisherfolk, and particularly inland fishing communities, are severely marginalized in national statistics, especially in developing countries. While a few rapid rural appraisals and qualitative poverty profilings have been conducted in fishing communities in West Africa during the early 2000s, no quantitative and longitudinal survey focusing specifically on this group exists in most sub-Sahara African countries.

The main objective of the World Bank - WorldFish Center initiative was to fill the gap of data availability and knowledge about the fishery sector in sub-Saharan Africa. In particular, the specific objectives of the collaboration were:

- to design and field-test a high-quality fishery socio-economic module that can be included in future nationally representative statistical survey;
- to build the capacity of the statistical agencies in the areas of designing fishery surveys and collecting adequate data on households and communities involved in the fishery sector;
- to develop guidelines on designing fishery modules that can be used by national statistical agencies, research agencies, and other organizations to collect policy-relevant data on the fishery sector.

The final document of this initiative is a *Guide Book* (Béné et al. 2011) that explains how to create and organize a 'compact' fishery statistical module expected to become part of a larger, multi-topic, national household survey<sup>1</sup>. The Guide Book builds directly upon the questionnaire that was developed and field-tested by the WorldFish team in two countries (Malawi and Uganda) during the period Oct 2009 – Jan 2010. The present *Summary Report* is a supporting document of this process. The Summary report presents the results of the Malawi and Uganda field-tests.

Note that only wild (capture) fisheries have been considered, not aquaculture activities. This was because aquaculture activities are likely to be captured in agricultural surveys, while wild fisheries are usually not included. Also, in much of rural Africa, aquaculture is not as important to livelihoods of smallholders and the landless poor as fisheries are. In Asia, where aquaculture is more widespread, this is not the case, although there, too, aquaculture is more commonly a medium to large scale business, rather than a small-holder activity.

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<sup>1</sup> In most cases, these multi-topic household surveys exist already. For instance in the case of Malawi this survey is the IHS3 national questionnaire (Integrated Household Survey) scheduled to be administered across Malawi in 2010.

## The pilot tests

The fishery module was field-tested in two countries, Malawi (Nov. 2009) and Uganda (Jan. 2010). Due to budget limitation, 2 weeks of field work only were carried out in each country (four in total). These 2 weeks were used to (i) train the teams of 8 local enumerators and (ii) conduct a 4-day pilot test of the questionnaire. In Malawi and Uganda, two very different geographic areas were selected in order to increase the chance of sampling all possible types of small-scale fishing-dependent households (self-employed full time fishers, crew members, seasonal or full time fisher-farmers, fish processors, fish traders, etc.). The area in Malawi was the relatively remote rural area of the Lower Shire valley where it was expected to find a reasonable proportion of seasonal and full-time fisher-farmers, plus some fish processors. In this area 7 villages were visited. In Uganda the more 'market-connected' shore of Lake Victoria where both full-time self-employed and crew members operate, along with fish processors and traders, was targeted. In that area, 8 villages were visited.

As a large number of the questions included in the module are targeting individual members (as opposed to household at an aggregate level), the details of the household composition (number of household members, age, sex, relation to the head, etc.) are needed. In the normal situation, when the fishery module is administered as part of the multi-purpose questionnaire, the information related to the household composition will be collected through the household roster –usually the first component of the multi-purpose questionnaire –see Fig.3 above. In the case of the pilot testing however, since we did not administer the whole multi-purpose questionnaire but only the fishery module we had to add a 'mini' household roster sheet at the beginning of our questionnaire.

Additionally it was decided to include 4 'complementary' series of questions in order to collect some other basic background information about the household welfare. Wherever possible these questions were directly derived from the IHS3 questionnaire, with some slight adaptations where necessary<sup>2</sup>. They include: land plot ownership; food consumption; food security; health; and durable goods.

## Results

To test the fishery module 136 households were surveyed in Malawi and 132 in Uganda. These were selected randomly amongst the villages targeted for the pilot testing. A consequence of this random process was that some of the households interviewed appeared not to be engaged in any form of fishery-related activities. In Malawi most of these non-fishery-dependent households were farmers, while the non-fishery-dependent households in Uganda were mainly local traders/merchants. In total 94 out of the 136 households interviewed in Malawi and 103 out of the 132 in Uganda were fishery-dependent. These two samples were large enough to test the robustness of the questionnaire. Below are some of the preliminary results obtained. No real attempts have been made to interpret these preliminary results.

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<sup>2</sup> In particular, the lists of items included in the Uganda complementary questions slightly differ from the ones included in the Malawian version, in order to reflect local specificities in terms of food and durable goods.

## Types of activities

As expected, the fishery-dependent households in Malawi and Uganda are engaged to different degrees in fishery-related activities (Table 1). In the Lower Shire (Malawi) a majority of households (61%) defined themselves as part-time fishers, highlighting the fact that the different members of these households engage in fishing as part of a larger, diversified, portfolio of activities. In contrast, on the Shore of the Lake Victoria, the large majority of the fishery-dependent households (82%) are full-time fishers. A slight seasonal variation in these proportions is observed, in particular in Malawi where the number of households engaged in full-time fishing decreases during the low fishing season.

The data also show that (in line with our expectations) some of the fishers on the shore of Lake Victoria do not own fishing gear and engage in fishing as crew members on the boats of another fisher. This concerns 38% of the households who declare to be engaged in fishing activity. By contrast, all the households who engage in fishing activities in the Lower Shire are self-employed.

Table 1. Number of households engaged in different fishing strategies in the two pilot sites (percentage in brackets)

|                  | Lower Shire |           |       | Lake Victoria |          |       |
|------------------|-------------|-----------|-------|---------------|----------|-------|
|                  | High        | Low       | Total | High          | Low      | Total |
| Full-time fisher | 39 (42%)    | 30 (36%)  | 39    | 67 (82%)      | 53 (81%) | 67    |
| Part-time fisher | 54 (58%)    | 54 (64%)  | 54    | 15 (18%)      | 12 (19%) | 15    |
| Crew             | 0           | 0         | 0     | 31 (38%)      | 25 (39%) | 31    |
| Self-employed    | 93 (100%)   | 84 (100%) | 93    | 51 (62%)      | 40 (61%) | 51    |

Notes: 'High'/'Low' refer to high and low fishing season. 'Total' refers to the whole year

Table 2 shows the number of households who are engaged in various types of fishery-related activities. We recall that, according to the definitions used in the questionnaire, households who sell part, or the totality, of their own catch (even fresh) are said to be engaged in fish processing. In contrast, full subsistence fishing households are those who declare consuming the entire amount of fish that they catch (and therefore do not sell any fish). Data shows that a small number of households are engaged in this full-subsistence activity in Malawi and even fewer in Uganda. Interestingly in both countries this full-subsistence strategy is observed only during the low fishing season.

Table 2. Number of households engaged in different fishery-related activities in the two pilot sites (percentage in brackets)

| Revenues source                  | Lower Shire |          |       | Lake Victoria |          |       |
|----------------------------------|-------------|----------|-------|---------------|----------|-------|
|                                  | High        | Low      | Total | High          | Low      | Total |
| Full subsistence                 | 0           | 6 (7%)   | 0     | 0             | 2 (2%)   | 0     |
| Fishing / fish processing        | 92 (100%)   | 73 (88%) | 92    | 82 (82%)      | 60 (71%) | 85    |
| Fish trading                     | 6 (7%)      | 4 (5%)   | 6     | 21 (21%)      | 21 (25%) | 21    |
| Total Fishery-related activities | 92          | 83       | 92    | 99            | 84       | 103   |

Notes: 'High'/'Low' refer to High and Low fishing season. 'Total' refers to the whole year

Overall, the various fishery-related activities show some degrees of seasonality in both areas. Fewer households engage in fishing during the low fishing season. This is in line with the trends already observed in Table 1, and also with results on landings that will be presented below.

Finally, Table 2 also shows that, as expected, the number of households who engage in fish trading is higher in Uganda than in Malawi. There does not seem to be any seasonality in this fish trading activity however –at least in terms of number of households who engage in it.

### Landings

Table 3 displays the main statistics of the landings obtained for the two pilot sites. The estimates have been organized by fishing season (high/low/total). Overall we observe that the average catch in Uganda is substantially higher than in Malawi, which reflect, *inter alia*, the higher level of capitalization of the sector on the shores of Lake Victoria.

Table 3. Estimated landings (kg) per household in the 2 pilot sites.

|          | Lower Shire |       |       | Lake Victoria |        |        |
|----------|-------------|-------|-------|---------------|--------|--------|
|          | High        | Low   | Total | High          | Low    | Total  |
| N        | 92          | 83    | 92    | 82            | 62     | 85     |
| mean     | 1287        | 502   | 1740  | 4693          | 1571   | 5674   |
| range    | 7227        | 9497  | 14505 | 59,993        | 14,399 | 74,393 |
| coef var | 173         | 131   | 254   | 1057          | 323    | 1205   |
| skewness | 1.90        | 5.60  | 2.70  | 3.99          | 3.19   | 4.08   |
| kurtosis | 5.90        | 39.88 | 11.59 | 20.60         | 14.65  | 22.26  |
| median   | 495         | 125   | 711   | 1600          | 560    | 2100   |

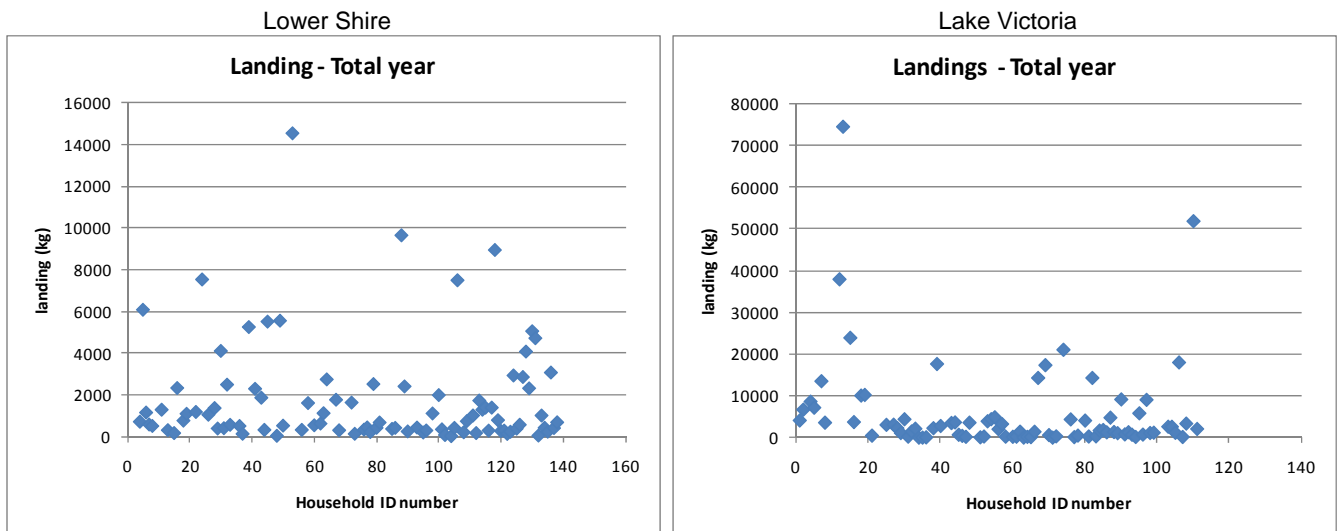


Fig.1 Total landing per household for the two areas sampled.



Fig.1 shows the same data but at the individual household level and for the entire year. The figures and the skewness/kurtosis indexes suggest a strong non-symmetric distribution of the data, with a large majority of the landings close to the low part of the range while only few households exhibits high catch. This is confirmed by the estimates of the univariate kernel density (Fig.2) which shows that most of the data are on the left side of the arithmetic mean.

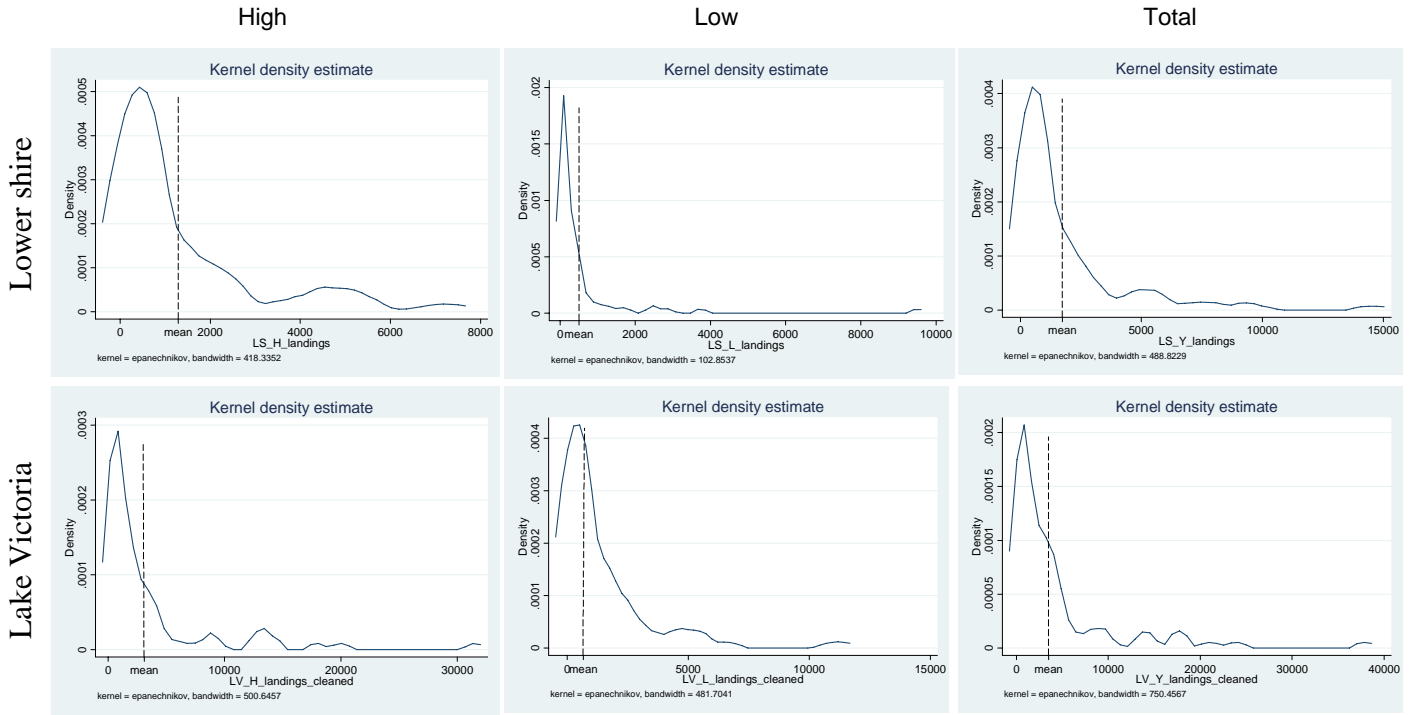


Fig.2 Univariate kernel density of the landings for both Malawi and Uganda pilot tests. The dotted lines indicate the (arithmetic) means for each series.

Finally what the diagrams also show –which was suggested in Table 3 as well- is that the choice of disaggregating the whole year into 2 seasons was justified (in the case of the two fisheries considered here) since in both Malawi and Uganda the landings show important seasonal variations between the ‘high’ and ‘low’ seasons.

### **Incomes**

One of the main objectives of the questionnaire was to estimate the income derived from fishery-related activities. Fig.3 and Table 4 display the main statistics and individual household level data for these income data. The values correspond to the households’ net revenues estimated by summing up the gross revenues derived from all fishery-related activities at the individual household level (fish processing, fish trading, fishing gear/boat renting out) and subtracting the fixed and variable costs associated with these activities -including labour costs (e.g. crew salaries) and new fishing gear and/boats purchased during the season. The net income figure also includes fish consumption by the households, valued at the local market prices.

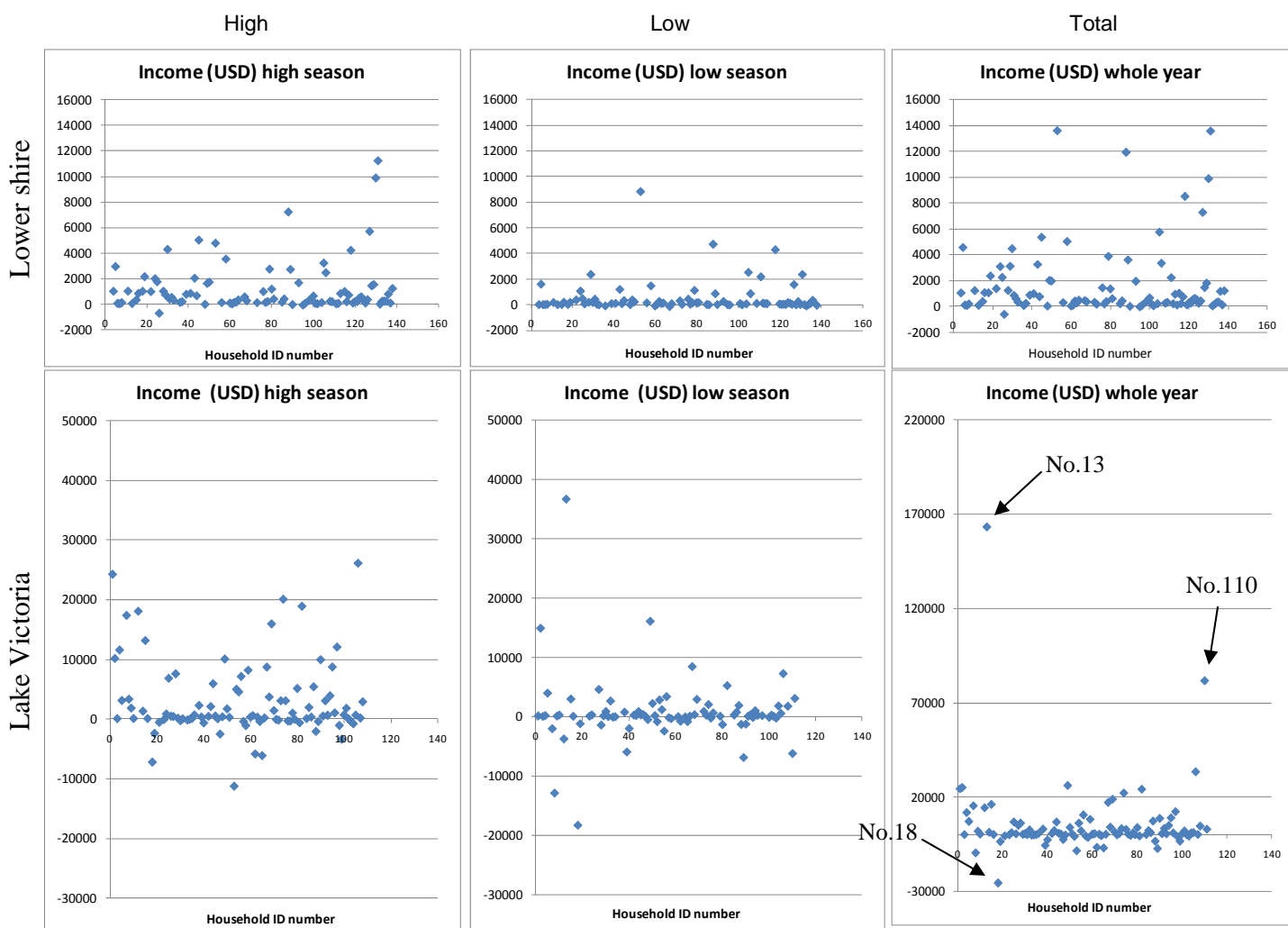


Fig.3. Incomes per household for the two pilot sites.

Table 4. Household income (net revenues) in USD derived from fishery-related activities in the two areas.

|          | Lower Shire |       |        | Lake Victoria <sup>a</sup> |        |        |
|----------|-------------|-------|--------|----------------------------|--------|--------|
|          | High        | Low   | Total  | High                       | Low    | Total  |
| N        | 92          | 85    | 94     | 96                         | 81     | 100    |
| mean     | 1,213       | 515   | 1,654  | 3,105                      | 661    | 3,517  |
| range    | 11,914      | 8,969 | 14,234 | 37,386                     | 28,974 | 42,935 |
| coef var | 1.63        | 2.43  | 1.69   | 2.00                       | 5.35   | 2.17   |
| skewness | 2.97        | 4.38  | 2.76   | 1.65                       | 1.19   | 1.73   |
| kurtosis | 13.00       | 25.87 | 10.70  | 6.16                       | 11.62  | 6.22   |
| median   | 414         | 97    | 507    | 610                        | 177    | 782    |

Note: a. For Lake Victoria, values are estimated without households no.13, 18, and 110.

Data are shown in USD for both the Lower Shire and the Lake Victoria sites, using respectively the Dec 2009 and Jan 2010 exchange rates: Malawian Kwacha 140/1 USD and Ugandan Shilling 1915/1 USD<sup>3</sup>.

From Fig.3, note the three ‘outliers’ (households No.13, 18 and 110) who lie clearly outside the ‘normal’ range<sup>4</sup>. These three outliers were removed for the statistical (Table 4) and kernel estimates (Fig.4). Like in the case of fish landings (Table 3 and Fig.1), incomes show a relatively high degree of skewness (with the exception of the Lake Victoria low season data) -see Fig.4.

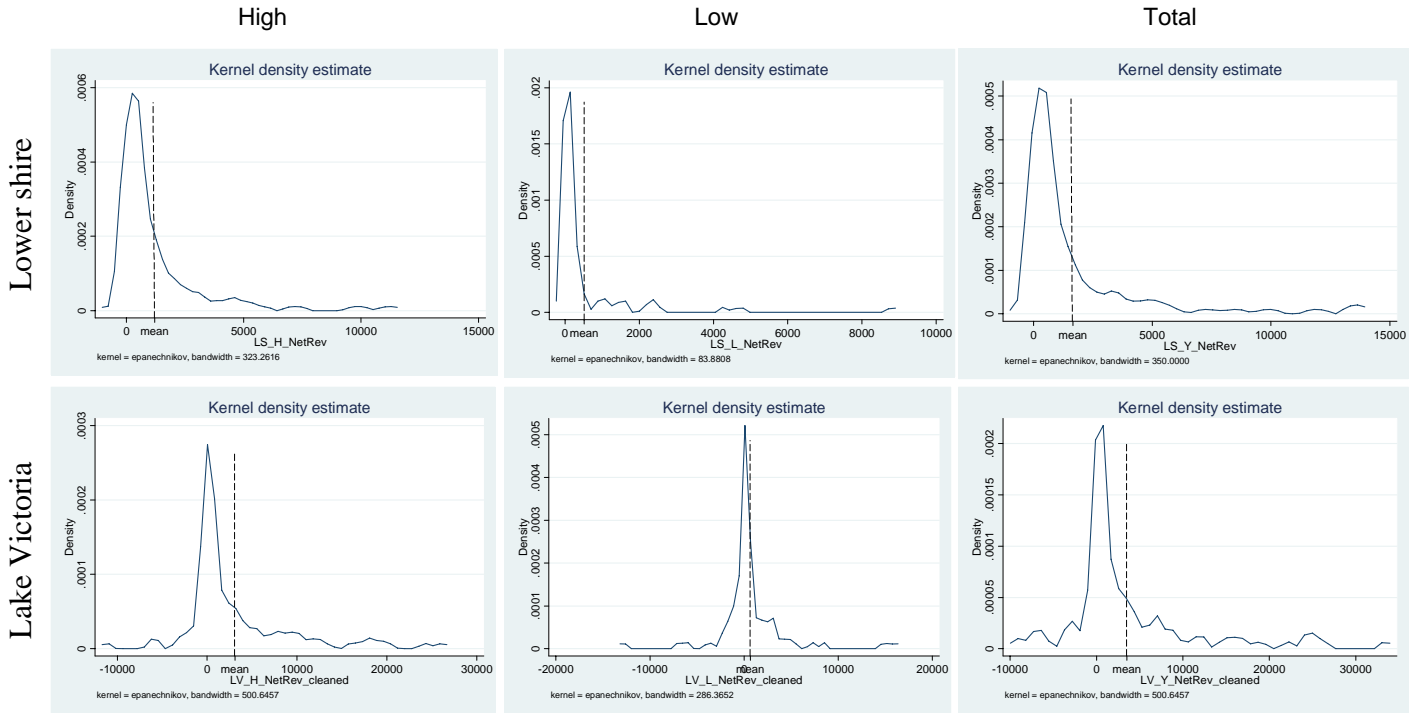


Fig.4 Univariate kernel density of the net revenues for both Malawi and Uganda pilot tests. The dotted lines indicate the means. For the Uganda data, estimates made after removing data from households No.13, 18, and 110.

The income data shows a high degree of seasonality. This reflects the seasonality that was already observed at the catch level. Note further that the rates of seasonal change in revenues (% change in revenues between high and low season) for the Lower Shire is almost identical to the rate of change in landings (respectively 61% and 58%) while the rate of seasonal change in revenues for the Lake Victoria is substantially higher than the rate of seasonal change of the landings (79% versus 61%)<sup>5</sup>. This suggests that the market prices on the shore of the Lake Victoria accentuate even further the seasonality already observed at the landing level.

<sup>3</sup> Using the 2009 PPP/USD would not change fundamentally the comparative trend. With the exchange rate we have a ratio:  $1915/140 = 13.67$ , while the PPP gives us:  $996.213/85.735 = 11.61$

<sup>4</sup> Households No.13 and No.110 display net incomes beyond USD70,000 for the last 12 months while household No.18 exhibits negative annual income reaching USD -30,000.

<sup>5</sup> For the Lake Victoria, these rates of change have been estimated without the 3 outliers. With these outliers, the rates are 85% (revenues) versus 67% (landings)

Also interesting from a vulnerability perspective is the fact that in both Malawi and Uganda the coefficients of variation of the households' incomes (Table 4) are systematically higher during the low fishing season. If one makes the strong assumption that individual households' exposure to covariate risks over time can be captured through the heterogeneity of groups' incomes, these higher coefficients of variation suggest that in both Lower Shire and Lake Victoria areas, fishery-dependent households are likely to exhibit higher levels of vulnerability during the low fishing season (at least based on their fishery-related incomes).

### ***Fish consumption***

Fishery-related activities are not simply essential in the household economy as a source of cash/incomes. They also provide a critical source of food, and in particular of nutrient-rich food. Another important aspect for which we propose some preliminary results is therefore the level of household's fish self-consumption. This point can be looked at through two indicators: (a) the (absolute) quantity of fish kept for self-consumption and (b) the percentage of households' own catch consumed.

Table 5. Per capita fish consumption (in kg/week)<sup>a</sup>

|          | Lower Shire |       |       | Lake Victoria |      |       |
|----------|-------------|-------|-------|---------------|------|-------|
|          | High        | Low   | Total | High          | Low  | Total |
| N        | 92          | 83    | 92    | 82            | 62   | 85    |
| mean     | 2.07        | 1.31  | 1.81  | 0.96          | 0.60 | 1.19  |
| range    | 11.67       | 18.00 | 11.74 | 8.75          | 5.00 | 14.00 |
| coef var | 1.10        | 1.81  | 1.13  | 1.80          | 1.71 | 1.75  |
| skewness | 2.26        | 5.08  | 2.53  | 2.94          | 2.55 | 3.84  |
| kurtosis | 8.83        | 33.35 | 10.52 | 11.86         | 9.46 | 21.17 |
| median   | 1.44        | 0.65  | 1.15  | 0.31          | 0.25 | 0.50  |

Note: a. only fishers/fish processors were included in this analysis, not fish traders.

Table 6. Percentages of own catch kept for self-consumption<sup>a</sup>

|          | Lower Shire |      |       | Lake Victoria |       |       |
|----------|-------------|------|-------|---------------|-------|-------|
|          | High        | Low  | Total | High          | Low   | Total |
| N        | 92          | 83   | 92    | 82            | 62    | 85    |
| mean     | 19%         | 34%  | 21%   | 4%            | 7%    | 5%    |
| range    | 0.83        | 1.00 | 0.77  | 0.4           | 1     | 0.4   |
| coef var | 0.82        | 0.82 | 0.75  | 1.56          | 2.63  | 1.42  |
| skewness | 1.26        | 0.99 | 1.21  | 2.79          | 4.31  | 2.30  |
| kurtosis | 5.04        | 3.19 | 4.41  | 13.21         | 21.53 | 9.67  |
| median   | 14%         | 25%  | 16%   | 1%            | 1%    | 2%    |

Note: a. only fishers/fish processors were included in this analysis, not fish traders.

Tables 5 and 6 show these two indicators and their main statistics for the two pilot sites, disaggregated between high and low seasons. Fig.5 displays the means and 95% CIs. The Lower Shire data show some relatively high per capita fish consumption (up to 2 kg/week per person)

during the high season. The data also show some seasonal variations with a decrease in the consumption during the low fishing season (in relation to the lower landings during that period). Interestingly it seems that both in the Lower Shire valley and on the shores of the Lake Victoria, households try to compensate for this decrease in landings by consuming a greater share of their own catch. This ‘compensating’ strategy appears clearly on the diagram on the right hand side in Fig.5: the proportion of self-consumption is higher in both Uganda and Malawi during the low fishing season (although not significantly different in Uganda from the high season).

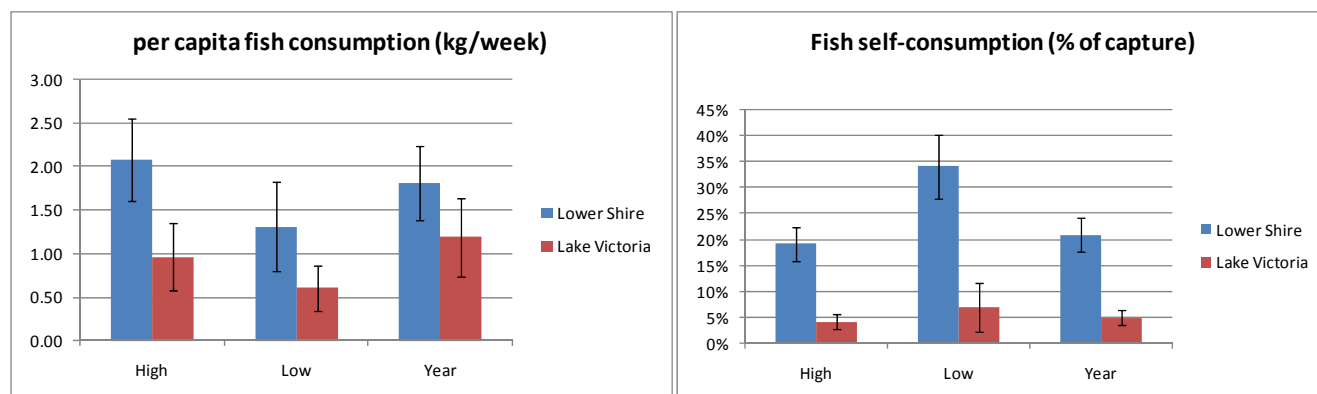


Fig.5 Left: per capita fish consumption in the two pilot sites; right: percentage of catch kept for household consumption (the error bars show 95% CI). Note: only fishers/fish processors were included in this analysis, not fish traders.

## Comparison fishers / non-fishers (complementary information)

In this last part of the document we summarize the additional background information that was collected through the ‘complementary’ questions administered during the pilot testing. We recall that this background information included the following:

- land plot ownership;
- food consumption;
- food security;
- health issues; and
- durable goods.

A potentially interesting way to present these data is to make a comparison between fishery-dependent households and non-fishery-dependent households. For this we included in the analysis the data collected from the non-fishery-dependent households who were surveyed during the field testing. One remark is that these complementary data were not disaggregated by season. We are missing, therefore, information on potential seasonal variation.

### ***Land ownership***

Land ownership is often presented as a major limiting production factor for fishers. It is indeed correct that in many part of the world, access to cultivable land may be limited for fishing communities. It would however be dangerous to ‘generalize’ this characteristic and to depict fisherfolk systematically as ‘landless’ households. In our case the data confirm that land

ownership is not a factor that differentiates fishing from non-fishing households (Fig.6). Nevertheless, it may not appear surprising to observe that along the shore of the Lake Victoria where a greater proportion of households are engaged in full-time fishing, the fishing households own on average a plot of land which is almost half the size of that owned by the non-fishing households (although the difference is not statistically significant due to the high variance of the data for non-fishers). Also worth noting is the fact that only 43 households (fishing and non-fishing dependent) in Uganda declare owning some land (out of the 132 interviewed i.e. 32.5%) while in Malawi 130 households out of the 136 interviewed (95.5%) declare owning some land.

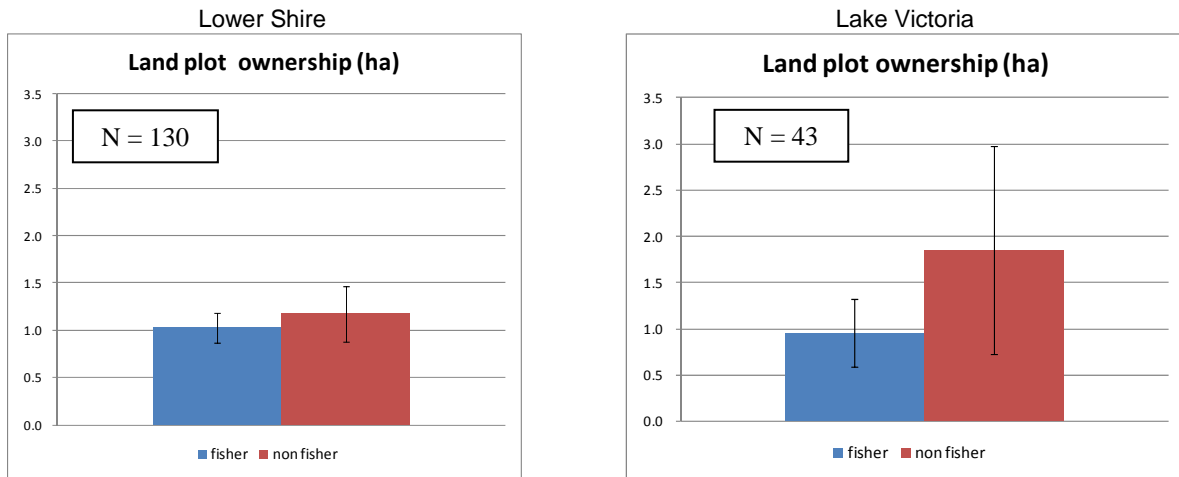


Fig.6. Land ownership in the two pilot sites.

### Food expenditure

Fig.7 illustrates the quantity of food (as recalled by the respondents) that was purchased over the last 7 days prior to the survey, adjusted for the number of persons in the household. The estimates do not include food items that were self-produced. No significant difference is observed between fishery-dependent and non-fishery-dependent households.

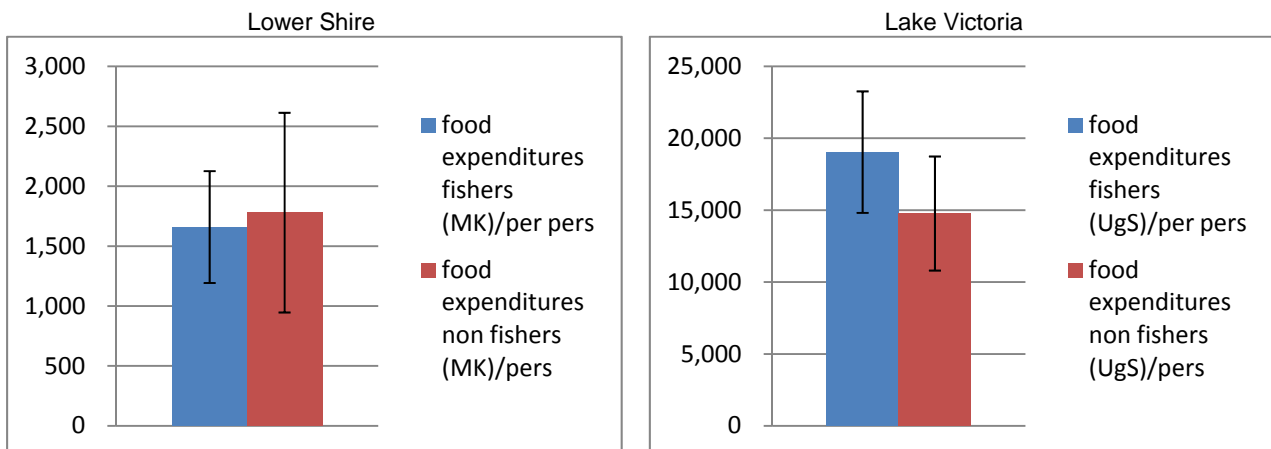


Fig.7. Food expenditure per capita –excluding food self-produced (in local currencies).

## ***Food security***

Household food security was estimated through two indicators: a 1-week recall and a 12-month recall of (perceived) threats of food availability at the household level<sup>6</sup>. The 1-week recall however is likely to be sensitive to the period when the survey was implemented. One could in particular hypothesize that households with different livelihood strategies would be exposed to risk insecurity at different period of the year. The index of food insecurity over 12 month may therefore be more appropriate and this is the indicator we used here (Table 7). In addition the questionnaire included a question regarding the length of the period during which households were exposed to food insecurity (measured in number of weeks).

Table 7. Food insecurity estimates

| Malawi                 | n / N    | (%) | Length (weeks) |
|------------------------|----------|-----|----------------|
| Food insecure 12 month | 99 / 136 | 73% | 13.3           |
| Fishing dep. HH        | 67 / 92  | 74% | 13.3           |
| Non-fishing-dep. HH    | 32 / 45  | 71% | 13.2           |
| Non Food-insecure      | 37 / 136 | 27% |                |
| Uganda                 |          |     |                |
| Food insecure 12 month | 50 / 132 | 38% | 15.1           |
| Fishing dep. HH        | 33 / 79  | 42% | 15.3           |
| Non-fishing-dep. HH    | 17 / 53  | 32% | 14.8           |
| Non Food-insecure      | 82 / 132 | 62% |                |

While the data shows that there is no difference between fishery-dependent and non-fishery-dependent households in terms of proportion of households who declare that they were exposed to food insecurity in the last 12 months in Malawi (74% vs 71%), the difference in Uganda is more important (42% vs 32%). We also observe that overall a larger proportion of households are food insecure in Malawi. Looking at the length of food insecurity complexifies, however, the picture. First no difference in the number of weeks was observed between fishers and non-fishers within the same country. Second, even if households in Uganda seem to be more food secure, the length of the food insecurity (when it occurs) seems to be slightly longer than in Malawi.

## ***Health***

Two aspects of household health were investigated. One concerns the nature, frequency and severity of health issues faced by the households in a 2 week period prior to the survey<sup>7</sup>. The second concerns the amount of money spent to cover the expenses (medication, doctor fees, transport between health center and household's home) induced by these health issues. Two hypotheses could be tested through these data: (a) fisherfolk are often thought to be particularly exposed to health risks, in particular water-borne disease, due to their frequent contact with water, and (b) as mentioned earlier in this report, because they are 'instantaneous' (or at least

<sup>6</sup> As defined in the IHS3 questionnaire.

<sup>7</sup> As defined in the IHS3 questionnaire.

daily) cash revenues generated through fishing revenues may be used more easily to pay unexpected expenses such as health medications.

Table 8. Health data analysis

| Malawi                | n / N     | (%) | Payment failure |
|-----------------------|-----------|-----|-----------------|
| Health issues         | 107 / 136 | 78% | 16%             |
| Fishery-dependent     | 72 / 92   | 79% | 16%             |
| Non-fishery dependent | 35 / 45   | 77% | 14%             |
| No health issues      | 29 / 136  | 22% | -               |
| <b>Uganda</b>         |           |     |                 |
| Health issues         | 78 / 132  | 59% | 3%              |
| Fishery-dependent     | 47 / 79   | 59% | 6%              |
| Non-fishery dependent | 31 / 53   | 58% | 0%              |
| No health issues      | 54 / 132  | 41% | -               |

Table 8 summarizes the data for the two sites. The first two columns on the left hand side show the number of households who have faced health issues (in absolute numbers and percentages), while the last column on the right hand side shows the number of cases where households who had faced health issues did not engage any expenses. The occurrence of these cases was interpreted as an indication of inability to pay for health expenses.

In both Malawi and Uganda the data suggest that fishery-dependent households are not more exposed to health issues than non-fishery-dependent households. Instead the data suggest that the higher exposure to health issues observed in the Lower Shire affects the whole population indistinctively. The data also indicate that the proportion of households who do not (or cannot) pay for health service and medication is higher (across the population) in the Lower Shire than it is on the shore of the Lake Victoria.

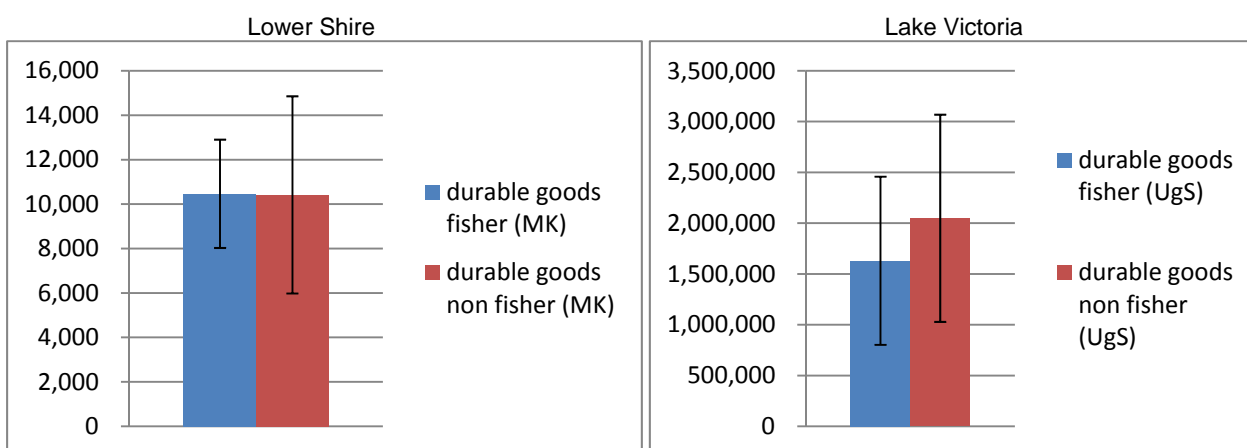


Fig.8. Values of durable goods owed by households in the two sites (in local currencies).



## Summing up the results

The series of figures and tables presented above suggests that the field testing has been successful. Using the fishery module we were able to estimate within two very different socio-economic contexts the costs, gross and net revenues generated by the different fishery-related activities in which households engage in Malawi and Uganda. The data show the high diversity of ways fishing and post-harvest activities (fish processing and fish trading) contribute to the diversified livelihood of these households.

The results of the two pilot testings also illustrate the capacity of the module to generate important information about fish consumption and the constantly evolving trade-off between the two main roles that fish plays in the household economy: income cash generation and food and nutrition security. Furthermore the data confirms the importance of accounting for potential seasonal variations in the different variables recorded. On the other hand, what the fishery module did not allow us to estimate is the relative contribution of the fishery sector to the total household income. This information would have been made available only if all the other modules of the multi-purpose questionnaires had been administrated.

Finally the succinct background information collected through the additional ‘complementary’ questions illustrates the difficulty to draw generalities regarding fishery-dependent households. Certainly the simplistic narrative that “households are poor because they are fishermen” and the perception widely accepted amongst policy-makers or even academics that small-scale fisheries are poverty traps do not seem to reflect the reality of the data. In both the Lower Shire and the Lake Victoria pilot sites, fishery-related households do not appear to be substantially worse-off than the non-fishery-dependent households who live in the same communities. Instead the main differences appear between areas, with the Lower Shire households (fishery-dependent and non-fishery-dependent households) facing systematically a more critical situation (at least in terms of food insecurity and exposure to health issues) than their counterparts along the shores of the Lake Victoria.

## References

Béné Christophe, Chijere Asafu D.G., Allison Edward H., Snyder, Katherine, and Crissman, Charles 2011. Guide Book for the design and implementation of fishery modules as part of integrated household surveys in developing countries. Document prepared for the ‘Living Standards Measurement Study-Integrated Surveys on Agriculture’ project, The WorldFish Center, Penang Malaysia, 33 p + Annexes.

## Appendix 1 Fishery Module

This appendix presents the fishery module only. The 'complementary' questions that were administered during the pilot testing (household roster and background information) are not included.

**STRICTLY CONFIDENTIAL**



Malawi Government  
National Statistical Office

Questionnaire  
number

### **THIRD INTEGRATED HOUSEHOLD SURVEY, 2010/11**

THIS SURVEY IS BEING CONDUCTED BY THE NATIONAL STATISTICAL OFFICE UNDER THE AUTHORITY OF THE 1967 STATISTICS ACT.  
THIS INFORMATION IS STRICTLY CONFIDENTIAL AND IS TO BE USED FOR STATISTICAL PURPOSES ONLY.

### **FISHERY QUESTIONNAIRE**

#### **MODULE A-1: HOUSEHOLD IDENTIFICATION**

WRITE CODES FOR TA, STA, OR TOWN; EA; AND HH ID. WRITE NAME OF DISTRICT; TA; VILLAGE; AND HOUSEHOLD HEAD.

|                                | CODE   | NAME        |
|--------------------------------|--|-------------|
| A01. DISTRICT:                 | <input type="text"/> <input type="text"/> <input type="text"/> | <hr/> <hr/> |
| A02. TA, STA, or TOWN:         | <input type="text"/> <input type="text"/>                      | <hr/> <hr/> |
| A03. ENUMERATION AREA:         | <input type="text"/> <input type="text"/> <input type="text"/> | <hr/> <hr/> |
| A04. PLACE / VILLAGE NAME:     |  | <hr/> <hr/> |
| A05. HOUSEHOLD ID (FROM LIST): | <input type="text"/> <input type="text"/> <input type="text"/> | <hr/> <hr/> |
| A06. NAME OF HOUSEHOLD HEAD:   |  | <hr/> <hr/> |

**MODULE A-2: SURVEY STAFF DETAILS**

A07. NAME OF ENUMERATOR: \_\_\_\_\_

A08. ENUMERATOR CODE: 

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

(ENUMERATOR  
»NEXT PAGE)

A09. DATE OF INTERVIEW: \_\_\_\_\_

A10. NAME OF FIELD SUPERVISOR: \_\_\_\_\_

A11. FIELD SUPERVISOR CODE: 

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

A12. DATE OF QUESTIONNAIRE INSPECTION: \_\_\_\_\_

A13. NAME OF ZONE SUPERVISOR: \_\_\_\_\_

A14. ZONE SUPERVISOR CODE: 

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

A15. DATE OF QUESTIONNAIRE \_\_\_\_\_

A16. NAME OF DATA ENTRY CLERK: \_\_\_\_\_

A17. DATA ENTRY CLERK CODE: 

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

A18. DATE OF DATA ENTRY: \_\_\_\_\_

A19. NAME OF DATA VALIDATION CLERK: \_\_\_\_\_

A20. DATA VALIDATION CLERK CODE: 

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

A21. DATE OF DATA VALIDATION: \_\_\_\_\_

|  |
|--|
| RECORD GENERAL NOTES ABOUT THE INTERVIEW AND ANY SPECIAL INFORMATION THAT WILL BE HELPFUL FOR SUPERVISORS AND DATA ANALYSIS. |
|  |

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**MODULE B: FISHERIES CALENDAR**

**ENUMERATOR: MAKE SURE THAT THE RESPONDENT ANSWERS THE FOLLOWING QUESTIONS BELOW BASED ON THE ENTIRE COMMUNITY'S SITUATION, NOT ON HIS OWN INDIVIDUAL EXPERIENCE.**

1. In your community, among people who fish, which are the HIGH season months?  
 Which months are the LOW season months?  
 And in which months is there almost no fishing?

**ENUMERATOR: RECORD STATUS OF EACH MONTH AS H (HIGH), L (LOW) OR N (NO FISHING).**

**IF THE RESPONDENT CLAIMS THAT THERE ARE NO DISTINCT HIGH VS. LOW SEASON MONTHS, RECORD H (HIGH) FOR MONTHS IN WHICH ANY FISHING TAKES PLACE AND ONLY ADMINISTER THE HIGH-SEASON RELATED MODULES.**

|     |     |       |       |     |      |      |        |      |     |     |     |
|-----|-----|-------|-------|-----|------|------|--------|------|-----|-----|-----|
| Jan | Feb | March | April | May | June | July | August | Sept | Oct | Nov | Dec |
|     |     |       |       |     |      |      |        |      |     |     |     |

**2. ENUMERATOR: FOR THE MONTHS THAT ANY FISHING TOOK PLACE IN THE COMMUNITY, WAS THE RESPONDENT ABLE TO DISTINGUISH BETWEEN HIGH VS. LOW SEASON MONTHS?**

|                   |   |
|-------------------|---|
| YES...1<br>NO...2 | <input style="width: 30px; height: 20px;" type="checkbox"/> |
|-------------------|---|

**MODULE C: FISHERIES LABOR (LAST HIGH SEASON)**

|  | FULL-TIME FISHING   |                 |             | PART-TIME FISHING   |                 |             | FISH PROCESSING  |                 |             | FISH TRADING   |                 |             |             |  |  |  |  |  |  |  |  |  |
|--|---|-----------------|-------------|---|-----------------|-------------|--|-----------------|-------------|--|-----------------|-------------|-------------|--|--|--|--|--|--|--|--|--|
|  | HH ROSTER ID CODE   | NUMBER OF WEEKS | DAYS / WEEK | HOURS / DAY   | NUMBER OF WEEKS | DAYS / WEEK | HOURS / DAY  | NUMBER OF WEEKS | DAYS / WEEK | HOURS / DAY  | NUMBER OF WEEKS | DAYS / WEEK | HOURS / DAY |  |  |  |  |  |  |  |  |  |
| <p>Please list the members of your household who were involved in fishing during the last last HIGH fishing season. This includes those fishing, fish processing or fish trading, full or part time.</p> | <p>1. FULL-TIME FISHERS ARE MEMBERS OF THE HOUSEHOLD WHO ENGAGED EXCLUSIVELY IN FISHING ACTIVITY DURING THE LAST HIGH SEASON.</p> <p>How many weeks was [NAME] a full-time fisher during the last HIGH fishing season?</p> <p>During those weeks, approximately how many days did [NAME] fish per week?</p> <p>During those days, approximately how many hours did [NAME] fish per day?</p> <p>ENTER 0 IN ALL COLUMNS IF [NAME] WAS NOT A FULL TIME FISHER DURING THE LAST HIGH FISHING SEASON.</p> |                 |             | <p>2. PART-TIME FISHERS ARE MEMBERS OF THE HOUSEHOLD WHO ENGAGED PRIMARILY IN NON-FISHING ACTIVITIES DURING THE LAST HIGH SEASON BUT SPENT SOME TIME FISHING.</p> <p>How many weeks was [NAME] a part-time fisher during the last HIGH fishing season?</p> <p>During those weeks, approximately how many days did [NAME] part-time fish per week?</p> <p>During those days, approximately how many hours did [NAME] part-time fish per day?</p> <p>ENTER 0 IN ALL COLUMNS IF [NAME] WAS NOT A PART-TIME FISHER DURING THE LAST HIGH FISHING SEASON.</p> |                 |             | <p>3. FISH PROCESSING IS DEFINED AS SELLING DIRECTLY TO CONSUMERS OR FISH TRADERS (I) FRESH FISH CAUGHT BY THE HOUSEHOLD, AND (II) PROCESSED FISH CAUGHT BY THE HOUSEHOLD, WHICH MAY HAVE BEEN SUBJECT TO TECHNIQUES SUCH AS SMOKING, SUN-DRYING, AND SALTING.</p> <p>FISH PROCESSING AND FISH TRADING ARE NOT MUTUALLY EXCLUSIVE.</p> <p>How many weeks did [NAME] engage in fish processing during the last HIGH fishing season?</p> <p>During those weeks, approximately how many days per week did [NAME] process fish?</p> <p>During those days, approximately how many hours per day did [NAME] process fish?</p> <p>ENTER 0 IN ALL COLUMNS IF [NAME] DID NOT ENGAGE IN FISH PROCESSING DURING THE LAST HIGH FISHING SEASON.</p> |                 |             | <p>4. FISH TRADING IS DEFINED AS SELLING (IN WHOLESALE OR RETAIL) FRESH OR PROCESSED FISH BOUGHT FROM OTHER FISHERS OR FISH PROCESSORS. SELLING FISH CAUGHT BY THE HOUSEHOLD SHOULD NOT BE CONSIDERED AS FISH TRADING BUT AS FISH PROCESSING .</p> <p>How many weeks did [NAME] engage in fish trading during the last HIGH fishing season?</p> <p>During those weeks, approximately how many days per week did [NAME] trade fish?</p> <p>During those days, approximately how many hours per day did [NAME] trade fish?</p> <p>ENTER 0 IN ALL COLUMNS IF [NAME] DID NOT ENGAGE IN FISH TRADING DURING THE LAST HIGH FISHING SEASON.</p> |                 |             |             |  |  |  |  |  |  |  |  |  |
|  | 1   |                 |             |   |                 |             |  |                 |             |  |                 |             |             |  |  |  |  |  |  |  |  |  |
|  | 2   |                 |             |   |                 |             |  |                 |             |  |                 |             |             |  |  |  |  |  |  |  |  |  |
|  | 3   |                 |             |   |                 |             |  |                 |             |  |                 |             |             |  |  |  |  |  |  |  |  |  |
|  | 4   |                 |             |   |                 |             |  |                 |             |  |                 |             |             |  |  |  |  |  |  |  |  |  |
|  | 5   |                 |             |   |                 |             |  |                 |             |  |                 |             |             |  |  |  |  |  |  |  |  |  |
|  | 6   |                 |             |   |                 |             |  |                 |             |  |                 |             |             |  |  |  |  |  |  |  |  |  |
|  | 7   |                 |             |   |                 |             |  |                 |             |  |                 |             |             |  |  |  |  |  |  |  |  |  |
|  | 8   |                 |             |   |                 |             |  |                 |             |  |                 |             |             |  |  |  |  |  |  |  |  |  |
|  | 9   |                 |             |   |                 |             |  |                 |             |  |                 |             |             |  |  |  |  |  |  |  |  |  |

**MODULE D: FISHERIES INPUT (LAST HIGH SEASON)**

| FISHING GEAR |                                 |   |  |  |   |  |  |
|--------------|---------------------------------|---|--|--|---|--|--|
| GEAR ID      | FISHING GEAR                    | 1.  | 2.   | 3.   | 4.  | 5.   | 6.   |
|              |                                 | Did any household member involved in fishing activities during the last HIGH fishing season use any [FISHING GEAR]? | How many [FISHING GEAR] were operated during the last HIGH fishing season? | How many [FISHING GEAR] are owned by your household? | What was the value of [FISHING GEAR] during the last HIGH fishing season? | How many units of [FISHING GEAR] did you or any member of your household purchase during the last HIGH fishing season?<br><br>ENTER ZERO IF NO UNITS PURCHASED | How much did your household pay to rent [GEAR] for use in the last HIGH season?<br><br>ENTER ZERO IF NONE RENTED |
|              |                                 | YES . 1<br>NO . . 2>>NEXT GEAR  | NUMBER OPERATED  | NUMBER OWNED   | VALUE (MK/UNIT)   | NUMBER PURCHASED   | MK   |
|              | 1. usipa(mosquito)net           |   |  |  |   |  |  |
|              | 2. kambuzi(beach)seine          |   |  |  |   |  |  |
|              | 3. mbedza(long /hand line)      |   |  |  |   |  |  |
|              | 4. mbuka/ntaya/ukonde (gillnet) |   |  |  |   |  |  |
|              | 5. mono(fish traps)             |   |  |  |   |  |  |
|              | 6. chavi (castnet)              |   |  |  |   |  |  |
|              | 7. other, specify _____         |   |  |  |   |  |  |
|              | 8. other, specify _____         |   |  |  |   |  |  |

**MODULE D: FISHERIES INPUT (LAST HIGH SEASON)**

| BOATS/ENGINES  |                      |   |  |   |  |  |  | HIRED LABOR  |  |                         |                    |                         |  |  |  |  |
|----------------|----------------------|---|--|---|--|--|--|--|--|-------------------------|--------------------|-------------------------|--|--|--|--|
| BOAT/ENGINE ID | BOAT/ENGINE          | 7.  | 8.   | 9.  | 10.  | 11.  | 12.  | 13.  | 14.  |                         |                    |                         |  |  |  |  |
|                |                      | Did your household use any [BOAT \ENGINE] during the last HIGH fishing season?<br><br>YES . 1<br>NO . . 2 >>NEXT<br>BOAT / ENGINE | How many [BOAT/ ENGINE] were operated during the last HIGH fishing season? | How many of [BOAT/ ENGINE] are owned by your household? | What was the value of [BOAT / ENGINE] during the last HIGH fishing season? | How many units of [BOAT/ENGINE] did you or any member of the household purchase during the last HIGH fishing season?<br><br>ENTER ZERO IF NO UNITS PURCHASED | How much did your household pay to rent [BOAT/ ENGINE] for use in the last HIGH season?<br><br>ENTER ZERO IF NONE RENTED | What have been the costs of fuel, oil and maintenance (altogether) <u>per week</u> for [BOAT/ ENGINE] operated during the last HIGH fishing season?<br><br>>>NEXT<br>BOAT / ENGINE | How many fishing men and/or children did you hire during the last HIGH fishing season?<br><br>How many weeks did each of these fishing person work for you during the last HIGH fishing season?<br><br><b>ENUMERATOR:</b> IF MEN (CHILDREN) ARE NOT ALL WORKING THE SAME NUMBER OF WEEKS USE AS MANY ROWS AS NECESSARY. ENTER ZERO IN ALL COLUMNS IF NONE HIRED AND >> 22. |                         |                    |                         |  |  |  |  |
|                |                      | YES/NO  | NUMBER OPERATED  | NUMBER OWNED  | VALUE (MK/UNIT)  | NUMBER PURCHASED   | MK   | COST (MK / BOAT / WEEK)  | NUMBER OF ADULTS   | NUMBER OF WEEKS / ADULT | NUMBER OF CHILDREN | NUMBER OF WEEKS / CHILD |  |  |  |  |
| 1.             | bwato (dugout)       |   |  |   |  |  |  |  |  |                         |                    |                         |  |  |  |  |
| 2.             | plankboat            |   |  |   |  |  |  |  |  |                         |                    |                         |  |  |  |  |
| 3.             | outboard engine      |   |  |   |  |  |  |  |  |                         |                    |                         |  |  |  |  |
| 4.             | other,specify: _____ |   |  |   |  |  |  |  |  |                         |                    |                         |  |  |  |  |
| 5.             | other,specify: _____ |   |  |   |  |  |  |  |  |                         |                    |                         |  |  |  |  |



**MODULE D: FISHERIES INPUT (LAST HIGH SEASON)**

| HIRED LABOR  |  |                                |   |  |              |                                      |              |  |   |                              |  |                                |
|--|--|--------------------------------|---|--|--------------|--------------------------------------|--------------|--|---|------------------------------|--|--------------------------------|
| <p>15. Did you pay these workers a fixed wage?</p> <p>IF THESE FIXED WAGES WERE DAILY, ASSIST RESPONDENT TO ESTIMATE THE WEEKLY EQUIVALENT.</p> <p>YES..1<br/>NO...2&gt;&gt;17</p> | <p>16. What was each paid per week?</p> <p>IF THESE FIXED WAGES WERE DAILY, ASSIST RESPONDENT TO ESTIMATE THE WEEKLY EQUIVALENT.</p> |                                | <p>17. As part of the remuneration for hired workers, did you pay these hired workers with fish as a share of the boat catch?</p> <p>YES..1<br/>NO...2 &gt;&gt;19</p> | <p>18. On average per week, what quantity of fish did you pay to each hired workers during the last HIGH fishing season?</p> <p><b>ENUMERATOR:</b> IF THE RESPONDENT CAN NOT DETAIL THE SHARE PAID TO EACH INDIVIDUAL HIRED WORKER, ASK THEM TO ESTIMATE THE AGGREGATE SHARE PAID TO ALL HIRED WORKERS (AS A WHOLE) PER WEEK AND DIVIDE BY THE NUMBER OF HIRED WORKERS AS INDICATED IN QUESTION 14.</p> <p><u>CODES FOR FISH PACKAGING</u><br/>                     PIECE.....1<br/>                     DOZEN.....2<br/>                     KILOGRAM.....3<br/>                     5 KG BAG.....4<br/>                     10 KG BAG.....5<br/>                     25 KG BAG.....6<br/>                     SMALL BASKET...7<br/>                     LARGE BASKET...8<br/>                     OTHER (SPECIFY) .9</p> |              |                                      |              | <p>19. As part of the remuneration for hired workers, did you pay these hired workers with cash as a share of the boat benefit?</p> <p>YES..1<br/>NO...2&gt;&gt;21</p> | <p>20. On average per week what share of the boat revenue did you pay to each hired worker as a salary during the last HIGH fishing season?</p> |                              | <p>21. During the last HIGH fishing season, did you pay the hired workers any other in kind benefit such as meals, cigarettes, etc.?</p> <p><b>ENUMERATOR:</b> ESTIMATE WITH THE RESPONDENT THE CASH VALUE OF INKIND BENEFIT / WEEK/ WORKER</p> <p>IF NO OTHER BENEFITS ENTER ZERO AND CONTINUE TO 22.</p> |                                |
| YES/NO   | ADULT:<br>MK / ADULT /<br>WEEK   | CHILD:<br>MK / CHILD /<br>WEEK | YES/NO  | ADULT:<br>QUANTITY/ ADULT /<br>WEEK  | UNIT<br>CODE | CHILD:<br>QUANTITY /<br>CHILD / WEEK | UNIT<br>CODE | YES/NO   | ADULT:<br>SHARE<br>MK/WEEK  | CHILD:<br>SHARE MK<br>/ WEEK | ADULT:<br>MK / ADULT /<br>WEEK   | CHILD:<br>MK / CHILD /<br>WEEK |
|  |  |                                |   |  |              |                                      |              |  |   |                              |  |                                |

**MODULE D: FISHERIES INPUT (LAST HIGH SEASON)**

| OTHER COSTS   |                                     |   |      |
|---|-------------------------------------|---|------|
| 22.   | 23.                                 | 24.   |      |
| Have there been other types of costs related to fishing activities during the last HIGH fishing season?<br><br>EXCLUDE PURCHASES/ RENTALS OF FISHING GEAR / BOATS/ ENGINES, EXPENDITURES FOR HIRED LABOR, COSTS ASSOCIATED WITH FISH TRADING ACTIVITIES.<br><br>YES . 1<br>NO . . 2 >><br>NEXT MODULE | Describe what these costs were for? | What were the total costs during the HIGH season? |      |
|   |                                     | UNIT<br>Week . . . . 1<br>Season . . . 2          |      |
| YES/NO  | TEXT DESCRIPTION                    | MK  | UNIT |
|   |                                     |   |      |

**MODULE E: FISHERIES OUTPUT (LAST HIGH SEASON)**

|  |  |   |  |                          |                           |                            |                          |                           |   |                       |
|--|--|---|--|--------------------------|---------------------------|----------------------------|--------------------------|---------------------------|---|-----------------------|
| <p>1. <b>ENUMERATOR:</b><br/>CHECK MODULE C.<br/><br/>WERE ANY HOUSEHOLD MEMBERS ENGAGED IN FISHING (Q1 or Q2) IN THE LAST HIGH SEASON?</p> <p>YES..1<br/>NO...2 &gt;&gt; 14</p> | <p>2. Please list up to five main species of fish that you or any member of your household have been landing as a fisher during the last HIGH fishing season.</p> <p><u>CODES FOR FISH SPECIES:</u><br/>MAKAKANI . . . . 1<br/>MAKUMBA . . . . 2<br/>MLAMBA . . . . 3<br/>MATEMDA . . . . 4<br/>NKUNGA . . . . 5<br/>CHAMBO . . . . 6<br/>NYESI . . . . 7<br/>MCHENI . . . . 8<br/>OTHER (SPECIFY) . . . 9<br/>AGGREGATED . . 10</p> | <p>3. How many weeks have you or any member your household been landing [FISH SPECIES] during the last HIGH season?</p> | <p>4. How much [FISH SPECIES] did you, other members of your household and/or any hired fishers catch <b>on average per week</b> during the last HIGH fishing season?</p> <p>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.</p> <p><u>CODES FOR FISH PACKAGING:</u><br/>PIECE . . . . . 1<br/>DOZEN . . . . . 2<br/>KILOGRAM . . . . . 3<br/>5 KG BAG . . . . . 4<br/>10 KG BAG . . . . . 5<br/>25 KG BAG . . . . . 6<br/>SMALL BASKET . . . 7<br/>LARGE BASKET . . . 8<br/>OTHER (SPECIFY) . . . . . 9</p> <p><u>CODES FOR PROCESSING:</u><br/>FRESH . . . . . 1<br/>SUN-DRIED . . . 2<br/>SMOKED . . . . 3<br/>ICED . . . . . 4<br/>OTHER (SPECIFY) . . 5</p> |                          |                           |                            |                          |                           | <p>5. <b>ENUMERATOR:</b> FOR EACH SPECIES, MULTIPLY THE AMOUNT LANDED / WEEK (QUESTION 4) BY THE TOTAL NUMBER OF WEEKS OF FISHING (QUESTION 3).</p> |                       |
|  |  |   | <p>FISH CAUGHT ID</p>  | <p>FISH SPECIES CODE</p> | <p>NUMBER OF WEEKS</p>    | <p>PROCESSING TYPE # 1</p> |                          |                           | <p>PROCESSING TYPE # 2</p>  |                       |
| <p>YES/NO</p>  |  |   | <p>QUANTITY LANDED</p>   | <p>FORM OF PACKAGING</p> | <p>FORM OF PROCESSING</p> | <p>QUANTITY LANDED</p>     | <p>FORM OF PACKAGING</p> | <p>FORM OF PROCESSING</p> | <p>AMOUNT X WEEKS</p>   | <p>AMOUNT X WEEKS</p> |
|  | 1.   |   |  |                          |                           |                            |                          |                           |   |                       |
|  | 2.   |   |  |                          |                           |                            |                          |                           |   |                       |
|  | 3.   |   |  |                          |                           |                            |                          |                           |   |                       |
|  | 4.   |   |  |                          |                           |                            |                          |                           |   |                       |
|  | 5.   |   |  |                          |                           |                            |                          |                           |   |                       |

**MODULE E: FISHERIES OUTPUT (LAST HIGH SEASON)**

| 6.<br>How much [FISH SPECIES] did you, other members of your household and/or any hired fishers catch <u>in TOTAL</u> during the last HIGH fishing season?<br><br><b>TOTAL FOR ENTIRE HIGH SEASON</b><br><br>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.<br><br><u>CODES FOR FISH PACKAGING:</u><br>PIECE .....1<br>DOZEN.....2<br>KILOGRAM.....3<br>5 KG BAG.....4<br>10 KG BAG.....5<br><b>25 KG BAG.....6</b><br>SMALL BASKET...7<br>LARGE BASKET...8<br>OTHER<br>(SPECIFY).....9 <th colspan="7" style="text-align: left; vertical-align: top;">7.<br/><b>ENUMERATOR:</b><br/>ARE THE FIGURES IN QUESTIONS 5 AND 6 CONSISTENT?<br/><br/>IF NOT, ASK THE RESPONDENT TO ADJUST HIS/HER ESTIMATION AND INDICATE BELOW THE REASON FOR THE DISCREPANCY BETWEEN THE TWO CATCH ESTIMATES<br/><br/>YES, THE FIGURES MATCHED...1<br/><br/>NO, THE ENTRIES WERE ADJUSTED...2 <th colspan="7" style="text-align: left; vertical-align: top;"><b>SALES</b><br/>8<br/>How much [FISH SPECIES] did you and/or other members of your household sell <u>on average per week</u> during the last HIGH fishing season?<br/><br/>During the weeks of operation, what was the average price per packaging unit?<br/><br/>THIS ESTIMATE SHOULD INCLUDE ONLY THE FRESH AND/OR PROCESSED FISH THAT WERE CAUGHT BY THE MEMBERS OF THE HOUSEHOLD OR ANY HIRED FISHERS.<br/><br/>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.<br/><br/><u>CODES FOR FISH PACKAGING:</u><br/>PIECE .....1<br/>DOZEN.....2<br/>KILOGRAM.....3<br/>5 KG BAG.....4<br/>10 KG BAG.....5<br/><b>25 KG BAG.....6</b><br/>SMALL BASKET...7<br/>LARGE BASKET...8<br/>OTHER<br/>(SPECIFY).....9 </th></th> |                   |                    |                     |                   |                    |        | 7.<br><b>ENUMERATOR:</b><br>ARE THE FIGURES IN QUESTIONS 5 AND 6 CONSISTENT?<br><br>IF NOT, ASK THE RESPONDENT TO ADJUST HIS/HER ESTIMATION AND INDICATE BELOW THE REASON FOR THE DISCREPANCY BETWEEN THE TWO CATCH ESTIMATES<br><br>YES, THE FIGURES MATCHED...1<br><br>NO, THE ENTRIES WERE ADJUSTED...2 <th colspan="7" style="text-align: left; vertical-align: top;"><b>SALES</b><br/>8<br/>How much [FISH SPECIES] did you and/or other members of your household sell <u>on average per week</u> during the last HIGH fishing season?<br/><br/>During the weeks of operation, what was the average price per packaging unit?<br/><br/>THIS ESTIMATE SHOULD INCLUDE ONLY THE FRESH AND/OR PROCESSED FISH THAT WERE CAUGHT BY THE MEMBERS OF THE HOUSEHOLD OR ANY HIRED FISHERS.<br/><br/>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.<br/><br/><u>CODES FOR FISH PACKAGING:</u><br/>PIECE .....1<br/>DOZEN.....2<br/>KILOGRAM.....3<br/>5 KG BAG.....4<br/>10 KG BAG.....5<br/><b>25 KG BAG.....6</b><br/>SMALL BASKET...7<br/>LARGE BASKET...8<br/>OTHER<br/>(SPECIFY).....9 </th> |                   |                    |            |                     |                   |                    | <b>SALES</b><br>8<br>How much [FISH SPECIES] did you and/or other members of your household sell <u>on average per week</u> during the last HIGH fishing season?<br><br>During the weeks of operation, what was the average price per packaging unit?<br><br>THIS ESTIMATE SHOULD INCLUDE ONLY THE FRESH AND/OR PROCESSED FISH THAT WERE CAUGHT BY THE MEMBERS OF THE HOUSEHOLD OR ANY HIRED FISHERS.<br><br>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.<br><br><u>CODES FOR FISH PACKAGING:</u><br>PIECE .....1<br>DOZEN.....2<br>KILOGRAM.....3<br>5 KG BAG.....4<br>10 KG BAG.....5<br><b>25 KG BAG.....6</b><br>SMALL BASKET...7<br>LARGE BASKET...8<br>OTHER<br>(SPECIFY).....9 |  |  |  |  |  |  |
|---|-------------------|--------------------|---------------------|-------------------|--------------------|--------|--|-------------------|--------------------|------------|---------------------|-------------------|--------------------|--|--|--|--|--|--|--|
| PROCESSING TYPE # 1   |                   |                    | PROCESSING TYPE # 2 |                   |                    | YES/NO | PROCESSING TYPE # 1  |                   |                    |            | PROCESSING TYPE # 2 |                   |                    |  |  |  |  |  |  |  |
| QUANTITY LANDED   | FORM OF PACKAGING | FORM OF PROCESSING | QUANTITY LANDED     | FORM OF PACKAGING | FORM OF PROCESSING |        | QUANTITY SOLD  | FORM OF PACKAGING | FORM OF PROCESSING | PRICE (MK) | QUANTITY SOLD       | FORM OF PACKAGING | FORM OF PROCESSING | PRICE (MK)   |  |  |  |  |  |  |
| 1.  |                   |                    |                     |                   |                    |        |  |                   |                    |            |                     |                   |                    |  |  |  |  |  |  |  |
| 2.  |                   |                    |                     |                   |                    | TEXT:  |  |                   |                    |            |                     |                   |                    |  |  |  |  |  |  |  |
| 3.  |                   |                    |                     |                   |                    |        |  |                   |                    |            |                     |                   |                    |  |  |  |  |  |  |  |
| 4.  |                   |                    |                     |                   |                    |        |  |                   |                    |            |                     |                   |                    |  |  |  |  |  |  |  |
| 5.  |                   |                    |                     |                   |                    |        |  |                   |                    |            |                     |                   |                    |  |  |  |  |  |  |  |

**MODULE E: FISHERIES OUTPUT (LAST HIGH SEASON)**

|                |   | CONSUMPTION  |   |                    |                   |  |                    |  |        |
|----------------|---|--|---|--------------------|-------------------|--|--------------------|--|--------|
| FISH CAUGHT ID | 9.  | 10.  | 11.   |                    |                   | 12.  |                    | 13.  |        |
|                | For how many weeks did you sell [FISH SPECIES] during the last HIGH fishing season? | <p><b>ENUMERATOR:</b> IS THE NUMBER OF WEEKS IN QUESTION 9 DIFFERENT FROM THE NUMBER OF WEEKS IN QUESTION 3?</p> <p>IF DIFFERENT, ASK THE RESPONDENT FOR THE REASON FOR DISCREPANCY BETWEEN THE TWO NUMBERS.</p> <p>YES...1<br/>NO.....2</p> | <p>How much [FISH SPECIES] caught by you and/or other members of your household during the last HIGH fishing season were kept <u>on average per week</u> for household consumption?</p> <p>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.</p> <p><u>CODES FOR FISH PACKAGING:</u></p> <p>PIECE .....1<br/>DOZEN.....2<br/>KILOGRAM.....3<br/>5 KG BAG.....4<br/>10 KG BAG.....5<br/>25 KG BAG.....6<br/>SMALL BASKET...7<br/>LARGE BASKET...8<br/>OTHER (SPECIFY).....9</p> <p><u>CODES FOR PROCESSING:</u></p> <p>FRESH.....1<br/>SUN-DRIED..2<br/>SMOKED.....3<br/>ICED.....4<br/>OTHER (SPECIFY)..5</p> |                    |                   | <p>Overall, during the last HIGH fishing season, how much [FISH SPECIES] do you keep for your own family consumption (in proportion)?</p> <p>READ RESPONSES</p> <p>Almost none.1<br/>1/4.....2<br/>1/2.....3<br/>3/4.....4<br/>Almost all..5</p> |                    | <p><b>ENUMERATOR:</b> FOR EACH SPECIES, THE AMOUNT CAUGHT / WEEK (QUESTION 4) SHOULD BE APPROXIMATELY EQUAL TO THE AMOUNT SOLD / WEEK (QUESTION 8) + SELF-CONSUMED / WEEK (QUESTION 11).</p> <p>IF NOT, ASK THE RESPONDENT TO ADJUST HIS/HER ESTIMATION AND INDICATE BELOW THE REASON FOR THE DISCREPANCY BETWEEN THE TWO CATCH ESTIMATES.</p> <p>YES, THE FIGURES MATCHED.....1<br/>NO, THE ENTRIES WERE ADJUSTED...2</p> |        |
|                | NUMBER OF WEEKS   | YES/NO   | PROCESSING TYPE # 1   |                    |                   | PROCESSING TYPE # 2  |                    |  | YES/NO |
|                |   | QUANTITY CONSUMED  | FORM OF PACKAGING   | FORM OF PROCESSING | QUANTITY CONSUMED | FORM OF PACKAGING  | FORM OF PROCESSING |  |        |
| 1.             |   |  |   |                    |                   |  |                    |  |        |
| 2.             |   | TEXT:  |   |                    |                   |  |                    | TEXT:  |        |
| 3.             |   |  |   |                    |                   |  |                    |  |        |
| 4.             |   |  |   |                    |                   |  |                    |  |        |
| 5.             |   |  |   |                    |                   |  |                    |  |        |
|                |   |  |   |                    |                   |  |                    |  |        |

**MODULE E: FISHERIES OUTPUT (LAST HIGH SEASON)**

**FISHING GEAR RENTED OUT**

|   |                                |  |   |  |
|---|--------------------------------|--|---|--|
|   |                                | <p>14.<br/>During the last HIGH fishing season, did your household rent out any [GEAR] to other fishers?</p> <p>YES..1<br/>NO...2 &gt;&gt;<br/>NEXT GEAR</p> | <p>15.<br/>How many [GEAR] did your household rent out during the last HIGH fishing season?</p> | <p>16.<br/>For how much in TOTAL did your household rent these [GEAR] out to other fishers during the last HIGH fishing season?</p> <p>( THEN &gt;&gt; NEXT GEAR )</p> |
|   | GEAR                           | YES/NO   | NUMBER OF UNITS   | MK   |
| 1 | usipa (mosquito)net            |  |   |  |
| 2 | kambuzi (beach) seine          |  |   |  |
| 3 | mbedza(long /hand line)        |  |   |  |
| 4 | mbuka /ntaya/ ukonde (gillnet) |  |   |  |
| 5 | mono(fish traps)               |  |   |  |
| 6 | chavi (castnet)                |  |   |  |

**MODULE F: FISH TRADING (LAST HIGH SEASON)**

|  |  |  |                            |                  |            |          |                            |                  |            |   |                            |                  |            |          |                            |                  |            |
|--|--|--|----------------------------|------------------|------------|----------|----------------------------|------------------|------------|---|----------------------------|------------------|------------|----------|----------------------------|------------------|------------|
| <p><b>ENUMERATOR:</b><br/>CHECK MODULE C. WERE ANY HOUSEHOLD MEMBERS ENGAGED IN FISH TRADING IN THE LAST HIGH SEASON?</p> <p>YES..1<br/>NO...2 &gt;&gt;6</p> | <p><b>1.</b><br/>Please list up to five main species of fish that you or any member of your household sold as part of your fish trading business.</p> <p><u>CODES FOR FISH SPECIES:</u></p> <p>MAKAKANI...1<br/>MAKUMBA...2<br/>MLAMBA...3<br/>MATEMDA...4<br/>NKUNGA...5<br/>CHAMBO...6<br/>NYESI...7<br/>MCHENI...8<br/>OTHER (SPECIFY) .9<br/>AGGREGATED...10</p> | <p><b>2.</b><br/>During the last HIGH fishing season, how much [FISH SPECIES] did you or any member of your household <b>purchase</b> from other fishers and/or fish processors <b>on average per week</b> as part of your fish trade business?</p> <p>During the weeks of operation, what was the average <b>buying</b> price per packaging unit?</p> <p>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.</p> <p><u>CODES FOR FISH PACKAGING:</u>      <u>CODES FOR PROCESSING:</u></p> <p>PIECE .....1                      FRESH.....1<br/>DOZEN.....2                      SUN-DRIED..2<br/>KILOGRAM.....3                    SMOKED.....3<br/>5 KG BAG.....4                    ICED.....4<br/>10 KG BAG.....5                    OTHER<br/>25 KG BAG.....6                    (SPECIFY)..5<br/>SMALL BASKET...7<br/>LARGE BASKET...8<br/>OTHER (SPECIFY) .9</p> |                            |                  |            |          |                            |                  |            | <p><b>3.</b><br/>During the last HIGH fishing season, how much [FISH SPECIES] did you or any member of <b>sell on average per week</b> as part of your fish trade business?</p> <p>During the weeks of operation, what was the average <b>selling</b> price per packaging unit?</p> <p>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.</p> <p><u>CODES FOR FISH PACKAGING:</u>      <u>CODES FOR PROCESSING:</u></p> <p>PIECE .....1                      FRESH.....1<br/>DOZEN.....2                      SUN-DRIED..2<br/>KILOGRAM.....3                    SMOKED.....3<br/>5 KG BAG.....4                    ICED.....4<br/>10 KG BAG.....5                    OTHER<br/>25 KG BAG.....6                    (SPECIFY)..5<br/>SMALL BASKET...7<br/>LARGE BASKET...8<br/>OTHER (SPECIFY) .9</p> |                            |                  |            |          |                            |                  |            |
|  | <p>YES/NO</p>  | <p>FISH SPECIES CODE</p>   | <p>PROCESSING TYPE # 1</p> |                  |            |          | <p>PROCESSING TYPE # 2</p> |                  |            |   | <p>PROCESSING TYPE # 1</p> |                  |            |          | <p>PROCESSING TYPE # 2</p> |                  |            |
|  |  | QUANTITY   | FORM OF PACKAG.            | FORM OF PROCESS. | PRICE (MK) | QUANTITY | FORM OF PACKAG.            | FORM OF PROCESS. | PRICE (MK) | QUANTITY  | FORM OF PACKAG.            | FORM OF PROCESS. | PRICE (MK) | QUANTITY | FORM OF PACKAG.            | FORM OF PROCESS. | PRICE (MK) |
|  | 1  |  |                            |                  |            |          |                            |                  |            |   |                            |                  |            |          |                            |                  |            |
|  | 2  |  |                            |                  |            |          |                            |                  |            |   |                            |                  |            |          |                            |                  |            |
|  | 3  |  |                            |                  |            |          |                            |                  |            |   |                            |                  |            |          |                            |                  |            |
|  | 4  |  |                            |                  |            |          |                            |                  |            |   |                            |                  |            |          |                            |                  |            |
|  | 5  |  |                            |                  |            |          |                            |                  |            |   |                            |                  |            |          |                            |                  |            |

**MODULE F: FISH TRADING (LAST HIGH SEASON)**

|   |  |   |  |   |
|---|--|---|--|---|
| <p><b>4.</b><br/> <b>ENUMERATOR:</b> ARE THE SELLING PRICES IN QUESTIONS 3 GREATER THAN THE BUYING PRICES IN QUESTION 2?<br/><br/>         IF NOT, ASK THE RESPONDENT TO ADJUST HIS/HER ESTIMATION AND INDICATE BELOW THE REASON FOR THE INITIAL ERROR<br/><br/>         YES, THE FIGURES MATCHED...1<br/><br/>         NO, THE ENTRIES WERE ADJUSTED...2</p> |  | <p><b>5.</b><br/>         Did your household have any costs for [COST ITEM] in relation to your fish trading activities during the last HIGH season?<br/><br/>         YES...1<br/>         NO...2 &gt;&gt; 7</p> | <p><b>6.</b><br/>         How much did your household have to pay for [COST ITEM] on a weekly basis during the last LOW season?<br/><br/>         (THEN &gt;&gt; NEXT COST ITEM)</p> | <p><b>7.</b><br/> <b>ENUMERATOR:</b> REFER TO <b>MODULE B: FISHERIES CALENDAR.</b><br/><br/>         IS THE ANSWER TO QUESTION 2 "YES"?<br/><br/>         YES..1&gt;&gt; NEXT MODULE<br/>         NO...2&gt;&gt; END OF QUESTIONNAIRE</p> |
| <p>YES/NO</p>   | <p><b>COST ITEM</b></p>  | <p>YES/NO</p>   | <p>AMOUNT (MK / Week)</p>  | <p>YES/NO</p>   |
| <p>TEXT:</p>  | <p>1. Hired Labor<br/>         2. Transport<br/>         3. Packaging<br/>         4. Ice<br/>         5 Tax<br/>         Other (Specify)<br/>         6 _____</p> |   |  |   |



**MODULE G: FISHERIES LABOR (LAST LOW SEASON)**

|   | FULL-TIME FISHING |                 |             | PART-TIME FISHING |                 |             | FISH PROCESSING |                 |             | FISH TRADING |                 |             |             |
|---|-------------------|-----------------|-------------|-------------------|-----------------|-------------|-----------------|-----------------|-------------|--------------|-----------------|-------------|-------------|
|   | HH ROSTER ID CODE | NUMBER OF WEEKS | DAYS / WEEK | HOURS / DAY       | NUMBER OF WEEKS | DAYS / WEEK | HOURS / DAY     | NUMBER OF WEEKS | DAYS / WEEK | HOURS / DAY  | NUMBER OF WEEKS | DAYS / WEEK | HOURS / DAY |
| 1 |                   |                 |             |                   |                 |             |                 |                 |             |              |                 |             |             |
| 2 |                   |                 |             |                   |                 |             |                 |                 |             |              |                 |             |             |
| 3 |                   |                 |             |                   |                 |             |                 |                 |             |              |                 |             |             |
| 4 |                   |                 |             |                   |                 |             |                 |                 |             |              |                 |             |             |
| 5 |                   |                 |             |                   |                 |             |                 |                 |             |              |                 |             |             |
| 6 |                   |                 |             |                   |                 |             |                 |                 |             |              |                 |             |             |
| 7 |                   |                 |             |                   |                 |             |                 |                 |             |              |                 |             |             |
| 8 |                   |                 |             |                   |                 |             |                 |                 |             |              |                 |             |             |
| 9 |                   |                 |             |                   |                 |             |                 |                 |             |              |                 |             |             |

**MODULE H: FISHERIES INPUT (LAST LOW SEASON)**

| FISHING GEAR |                              |  |   |  |  |   |   |
|--------------|------------------------------|--|---|--|--|---|---|
| GEAR ID      | FISHING GEAR                 | 1.<br>Did any household member involved in fishing activities during the last LOW fishing season use any [FISHING GEAR]? | 2.<br>How many [FISHING GEAR] were operated during the last LOW fishing season? | 3.<br>How many [FISHING GEAR] are owned by your household? | 4.<br>What was the value of [FISHING GEAR] during the last LOW fishing season? | 5.<br>How many units of [FISHING GEAR] did you or any member of your household purchase during the last LOW fishing season?<br><br>ENTER ZERO IF NO UNITS PURCHASED | 6.<br>How much did your household pay to rent [GEAR] for use in the last LOW season?<br><br>ENTER ZERO IF NONE RENTED |
|              |                              | YES . 1<br>NO . . 2>>NEXT GEAR   | NUMBER OPERATED   | NUMBER OWNED   | VALUE (MK/UNIT)  | NUMBER PURCHASED  | MK  |
|              | FISHING GEAR                 |  |   |  |  |   |   |
| 1.           | usipa(mosquito)net           |  |   |  |  |   |   |
| 2.           | kambuzi(beach)seine          |  |   |  |  |   |   |
| 3.           | mbedza(long /hand line)      |  |   |  |  |   |   |
| 4.           | mbuka/ntaya/ukonde (gillnet) |  |   |  |  |   |   |
| 5.           | mono(fish traps)             |  |   |  |  |   |   |
| 6.           | chavi (castnet)              |  |   |  |  |   |   |
| 7.           | other, specify _____         |  |   |  |  |   |   |
| 8.           | other, specify _____         |  |   |  |  |   |   |

**MODULE H: FISHERIES INPUT (LAST LOW SEASON)**

| BOATS/ENGINES  |                      |  |   |   |  |   |  | HIRED LABOR   |   |                         |                    |                         |  |
|----------------|----------------------|--|---|---|--|---|--|---|---|-------------------------|--------------------|-------------------------|--|
| BOAT/ENGINE ID | BOAT/ENGINE          | 7. Did your household use any [BOAT \ENGINE] during the last LOW fishing season? | 8. How many [BOAT/ENGINE] were operated during the last LOW fishing season? | 9. How many of [BOAT/ENGINE] are owned by your household? | 10. What was the value of [BOAT /ENGINE] during the last LOW fishing season? | 11. How many units of [BOAT/ENGINE] did you or any member of the household purchase during the last LOW fishing season?<br><br>ENTER ZERO IF NO UNITS PURCHASED | 12. How much did your household pay to rent [BOAT/ENGINE] for use in the last LOW season?<br><br>ENTER ZERO IF NONE RENTED | 13. What have been the costs of fuel, oil and maintenance (altogether) <u>per week</u> for [BOAT/ENGINE] operated during the last LOW fishing season?<br><br>>>NEXT BOAT/ENGINE | 14. How many fishing men and/or children did you hire during the last LOW fishing season?<br><br>How many weeks did each of these fishing person work for you during the last LOW fishing season?<br><br>ENUMERATOR: IF MEN (CHILDREN) ARE NOT ALL WORKING THE SAME NUMBER OF WEEKS USE AS MANY ROWS AS NECESSARY. ENTER ZERO IN ALL COLUMNS IF NONE HIRED AND >> 22. |                         |                    |                         |  |
|                |                      | YES/NO   | NUMBER OPERATED   | NUMBER OWNED  | VALUE (MK/UNIT)  | NUMBER PURCHASED  | MK   | COST (MK / BOAT / WEEK)   | NUMBER OF ADULTS  | NUMBER OF WEEKS / ADULT | NUMBER OF CHILDREN | NUMBER OF WEEKS / CHILD |  |
| 1.             | bwato (dugout)       |  |   |   |  |   |  |   |   |                         |                    |                         |  |
| 2.             | plankboat            |  |   |   |  |   |  |   |   |                         |                    |                         |  |
| 3.             | outboard engine      |  |   |   |  |   |  |   |   |                         |                    |                         |  |
| 4.             | other,specify: _____ |  |   |   |  |   |  |   |   |                         |                    |                         |  |
| 5.             | other,specify: _____ |  |   |   |  |   |  |   |   |                         |                    |                         |  |

**MODULE H: FISHERIES INPUT (LAST LOW SEASON)**

| HIRED LABOR  |  |                                |   |   |              |                                      |              |  |  |                             |  |                                |
|--|--|--------------------------------|---|---|--------------|--------------------------------------|--------------|--|--|-----------------------------|--|--------------------------------|
| <p>15. Did you pay these workers a fixed wage?</p> <p>IF THESE FIXED WAGES WERE DAILY, ASSIST RESPONDENT TO ESTIMATE THE WEEKLY EQUIVALENT.</p> <p>YES..1<br/>NO...2&gt;&gt;17</p> | <p>16. What was each paid per week?</p> <p>IF THESE FIXED WAGES WERE DAILY, ASSIST RESPONDENT TO ESTIMATE THE WEEKLY EQUIVALENT.</p> |                                | <p>17. As part of the remuneration for hired workers, did you pay these hired workers with fish as a share of the boat catch?</p> <p>YES..1<br/>NO...2 &gt;&gt;19</p> | <p>18. On average per week, what quantity of fish did you pay to each hired workers during the last LOW fishing season?</p> <p>ENUMERATOR: IF THE RESPONDENT CAN NOT DETAIL THE SHARE PAID TO EACH INDIVIDUAL HIRED WORKER, ASK THEM TO ESTIMATE THE AGGREGATE SHARE PAID TO ALL HIRED WORKERS (AS A WHOLE) PER WEEK AND DIVIDE BY THE NUMBER OF HIRED WORKERS AS INDICATED IN QUESTION 14.</p> <p><u>CODES FOR FISH PACKAGING</u><br/>                     PIECE.....1<br/>                     DOZEN.....2<br/>                     KILOGRAM.....3<br/>                     5 KG BAG.....4<br/>                     10 KG BAG.....5<br/>                     25 KG BAG.....6<br/>                     SMALL BASKET...7<br/>                     LARGE BASKET...8<br/>                     OTHER (SPECIFY).9</p> |              |                                      |              | <p>19. As part of the remuneration for hired workers, did you pay these hired workers with cash as a share of the boat benefit?</p> <p>YES..1<br/>NO...2&gt;&gt;21</p> | <p>20. On average per week what share of the boat revenue did you pay to each hired worker as a salary during the last LOW fishing season?</p> |                             | <p>21. During the last LOW fishing season, did you pay the hired workers any other in kind benefit such as meals, cigarettes, etc.?</p> <p>ENUMERATOR: ESTIMATE WITH THE RESPONDENT THE CASH VALUE OF INKIND BENEFIT / WEEK/ WORKER</p> <p>IF NO OTHER BENEFITS ENTER ZERO AND CONTINUE TO 22.</p> |                                |
| YES/NO   | ADULT:<br>MK / ADULT /<br>WEEK   | CHILD:<br>MK / CHILD /<br>WEEK | YES/NO  | ADULT:<br>QUANTITY/ ADULT /<br>WEEK   | UNIT<br>CODE | CHILD:<br>QUANTITY /<br>CHILD / WEEK | UNIT<br>CODE | YES/NO   | ADULT:<br>SHARE MK<br>/WEEK  | CHILD:<br>SHARE MK<br>/WEEK | ADULT:<br>MK / ADULT /<br>WEEK   | CHILD:<br>MK / CHILD /<br>WEEK |
|  |  |                                |   |   |              |                                      |              |  |  |                             |  |                                |

**MODULE H: FISHERIES INPUT (LAST LOW SEASON)**

| OTHER COSTS   |  |  |             |
|---|--|--|-------------|
| <p>22.<br/>Have there been other types of costs related to fishing activities during the last LOW fishing season?</p> <p>EXCLUDE PURCHASES/ RENTALS OF FISHING GEAR / BOATS/ ENGINES, EXPENDITURES FOR HIRED LABOR, COSTS ASSOCIATED WITH FISH TRADING ACTIVITIES.</p> <p>YES . 1<br/>NO . . 2 &gt;&gt;<br/>NEXT MODULE</p> | <p>23.<br/>Describe what these costs were for?</p> | <p>24.<br/>What were the total costs during the LOW season?</p> <p><u>UNIT</u><br/>Week . . . . 1<br/>Season . . . 2</p> |             |
| <p>YES/NO</p>   | <p>TEXT DESCRIPTION</p>                            | <p>MK</p>  | <p>UNIT</p> |
|   |  |  |             |
|   |  |  |             |

**MODULE I: FISHERIES OUTPUT (LAST LOW SEASON)**

|  |   |  |  |                          |                        |                            |                          |                           |   |                       |
|--|---|--|--|--------------------------|------------------------|----------------------------|--------------------------|---------------------------|---|-----------------------|
| <p>1. ENUMERATOR:<br/>CHECK MODULE C.<br/><br/>WERE ANY HOUSEHOLD MEMBERS ENGAGED IN FISHING (Q1 or Q2) IN THE LAST LOW SEASON?<br/><br/>YES..1<br/>NO...2 &gt;&gt; 14</p> | <p>2. Please list up to five main species of fish that you or any member of your household have been landing as a fisher during the last LOW fishing season.</p> <p><u>CODES FOR FISH SPECIES:</u><br/>MAKAKANI . . . . 1<br/>MAKUMBA . . . . 2<br/>MLAMBA . . . . 3<br/>MATEMDA . . . . 4<br/>NKUNGA . . . . 5<br/>CHAMBO . . . . 6<br/>NYESI . . . . 7<br/>MCHENI . . . . 8<br/>OTHER (SPECIFY) . . . 9<br/>AGGREGATED . . 10</p> | <p>3. How many weeks have you or any member your household been landing [FISH SPECIES] during the last LOW season?</p> | <p>4. How much [FISH SPECIES] did you, other members of your household and/or any hired fishers catch on average per week during the last LOW fishing season?<br/><br/>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.</p> <p><u>CODES FOR FISH PACKAGING:</u><br/>PIECE . . . . . 1<br/>DOZEN . . . . . 2<br/>KILOGRAM . . . . 3<br/>5 KG BAG . . . . 4<br/>10 KG BAG . . . . 5<br/>25 KG BAG . . . . 6<br/>SMALL BASKET . . 7<br/>LARGE BASKET . . 8<br/>OTHER (SPECIFY) . . . . 9</p> <p><u>CODES FOR PROCESSING:</u><br/>FRESH . . . . . 1<br/>SUN-DRIED . . . 2<br/>SMOKED . . . . 3<br/>ICED . . . . . 4<br/>OTHER (SPECIFY) . . 5</p> |                          |                        |                            |                          |                           | <p>5. <b>ENUMERATOR:</b> FOR EACH SPECIES, MULTIPLY THE AMOUNT LANDED / WEEK (QUESTION 4) BY THE TOTAL NUMBER OF WEEKS OF FISHING (QUESTION 3).</p> |                       |
|  |   |  | <p>FISH CAUGHT ID</p>  | <p>FISH SPECIES CODE</p> | <p>NUMBER OF WEEKS</p> | <p>PROCESSING TYPE # 1</p> |                          |                           | <p>PROCESSING TYPE # 2</p>  |                       |
| <p>QUANTITY LANDED</p>   | <p>FORM OF PACKAGING</p>  | <p>FORM OF PROCESSING</p>  |  |                          |                        | <p>QUANTITY LANDED</p>     | <p>FORM OF PACKAGING</p> | <p>FORM OF PROCESSING</p> | <p>AMOUNT X WEEKS</p>   | <p>AMOUNT X WEEKS</p> |
| <p>YES/NO</p>  | <p>1.</p>   |  |  |                          |                        |                            |                          |                           |   |                       |
|  | <p>2.</p>   |  |  |                          |                        |                            |                          |                           |   |                       |
|  | <p>3.</p>   |  |  |                          |                        |                            |                          |                           |   |                       |
|  | <p>4.</p>   |  |  |                          |                        |                            |                          |                           |   |                       |
|  | <p>5.</p>   |  |  |                          |                        |                            |                          |                           |   |                       |

**MODULE I: FISHERIES OUTPUT (LAST LOW SEASON)**

**SALES**

|                 |  |                    |                 |                     |                    |               |   |                     |                    |            |               |                     |   |            |  |  |  |  |  |  |
|-----------------|--|--------------------|-----------------|---------------------|--------------------|---------------|---|---------------------|--------------------|------------|---------------|---------------------|---|------------|--|--|--|--|--|--|
| FISH CAUGHT ID  | <p>6. How much [FISH SPECIES] did you, other members of your household and/or any hired fishers catch in TOTAL during the last LOW fishing season?</p> <p>TOTAL FOR ENTIRE LOW SEASON</p> <p>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.</p> <p><u>CODES FOR FISH PACKAGING:</u></p> <p>PIECE .....1<br/>DOZEN.....2<br/>KILOGRAM.....3<br/>5 KG BAG.....4<br/>10 KG BAG.....5<br/><b>25 KG BAG.....6</b><br/>SMALL BASKET...7<br/>LARGE BASKET...8<br/>OTHER<br/>(SPECIFY).....9</p> <p><u>CODES FOR PROCESSING:</u></p> <p>FRESH.....1<br/>SUN-DRIED..2<br/>SMOKED....3<br/>ICED.....4<br/><b>OTHER</b><br/>(SPECIFY)..5</p> |                    |                 |                     |                    |               | <p>7. <b>ENUMERATOR:</b> ARE THE FIGURES IN QUESTIONS 5 AND 6 CONSISTENT?</p> <p>IF NOT, ASK THE RESPONDENT TO ADJUST HIS/HER ESTIMATION AND INDICATE BELOW THE REASON FOR THE DISCREPANCY BETWEEN THE TWO CATCH ESTIMATES</p> <p>YES, THE FIGURES MATCHED...1</p> <p>NO, THE ENTRIES WERE ADJUSTED...2</p> |                     |                    |            |               |                     | <p>8. How much [FISH SPECIES] did you and/or other members of your household sell on average per week during the last LOW fishing season?</p> <p>During the weeks of operation, what was the average price per packaging unit?</p> <p>THIS ESTIMATE SHOULD INCLUDE ONLY THE FRESH AND/OR PROCESSED FISH THAT WERE CAUGHT BY THE MEMBERS OF THE HOUSEHOLD OR ANY HIRED FISHERS.</p> <p>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.</p> <p><u>CODES FOR FISH PACKAGING:</u></p> <p>PIECE .....1<br/>DOZEN.....2<br/>KILOGRAM.....3<br/>5 KG BAG.....4<br/>10 KG BAG.....5<br/><b>25 KG BAG.....6</b><br/>SMALL BASKET...7<br/>LARGE BASKET...8<br/>OTHER<br/>(SPECIFY).....9</p> <p><u>CODES FOR PROCESSING:</u></p> <p>FRESH.....1<br/>SUN-DRIED..2<br/>SMOKED....3<br/>ICED.....4<br/><b>OTHER</b><br/>(SPECIFY)..5</p> |            |  |  |  |  |  |  |
|                 | PROCESSING TYPE # 1  |                    |                 | PROCESSING TYPE # 2 |                    |               | YES/NO  | PROCESSING TYPE # 1 |                    |            |               | PROCESSING TYPE # 2 |   |            |  |  |  |  |  |  |
| QUANTITY LANDED | FORM OF PACKAGING  | FORM OF PROCESSING | QUANTITY LANDED | FORM OF PACKAGING   | FORM OF PROCESSING | QUANTITY SOLD |   | FORM OF PACKAGING   | FORM OF PROCESSING | PRICE (MK) | QUANTITY SOLD | FORM OF PACKAGING   | FORM OF PROCESSING  | PRICE (MK) |  |  |  |  |  |  |
| 1.              |  |                    |                 |                     |                    |               |   |                     |                    |            |               |                     |   |            |  |  |  |  |  |  |
| 2.              |  |                    |                 |                     |                    | TEXT:         |   |                     |                    |            |               |                     |   |            |  |  |  |  |  |  |
| 3.              |  |                    |                 |                     |                    |               |   |                     |                    |            |               |                     |   |            |  |  |  |  |  |  |
| 4.              |  |                    |                 |                     |                    |               |   |                     |                    |            |               |                     |   |            |  |  |  |  |  |  |
| 5.              |  |                    |                 |                     |                    |               |   |                     |                    |            |               |                     |   |            |  |  |  |  |  |  |

**MODULE I: FISHERIES OUTPUT (LAST LOW SEASON)**

|                |  | <b>CONSUMPTION</b>   |   |                    |                   |   |  |       |        |
|----------------|--|--|---|--------------------|-------------------|---|--|-------|--------|
| FISH CAUGHT ID | 9.   | 10.  | 11.   |                    |                   | 12.   | 13.  |       |        |
|                | For how many weeks did you sell [FISH SPECIES] during the last LOW fishing season? | <p><b>ENUMERATOR:</b> IS THE NUMBER OF WEEKS IN QUESTION 9 DIFFERENT FROM THE NUMBER OF WEEKS IN QUESTION 3?</p> <p>IF DIFFERENT, ASK THE RESPONDENT FOR THE REASON FOR DISCREPANCY BETWEEN THE TWO NUMBERS.</p> <p>YES...1<br/>NO.....2</p> | <p>How much [FISH SPECIES] caught by you and/or other members of your household during the last LOW fishing season were kept on average per week for household consumption?</p> <p>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.</p> <p><u>CODES FOR FISH PACKAGING:</u></p> <p>PIECE .....1<br/>DOZEN.....2<br/>KILOGRAM.....3<br/>5 KG BAG.....4<br/>10 KG BAG.....5<br/>25 KG BAG.....6<br/>SMALL BASKET...7<br/>LARGE BASKET...8<br/>OTHER<br/>(SPECIFY).....9</p> <p><u>CODES FOR PROCESSING:</u></p> <p>FRESH.....1<br/>SUN-DRIED..2<br/>SMOKED.....3<br/>ICED.....4<br/>OTHER<br/>(SPECIFY)..5</p> |                    |                   | <p>Overall, during the last LOW fishing season, how much [FISH SPECIES] do you keep for your own family consumption (in proportion)?</p> <p>READ RESPONSES</p> <p>Almost none.1<br/>1/4.....2<br/>1/2.....3<br/>3/4.....4<br/>Almost all..5</p> | <p><b>ENUMERATOR:</b> FOR EACH SPECIES, THE AMOUNT CAUGHT / WEEK (QUESTION 4) SHOULD BE APPROXIMATELY EQUAL TO THE AMOUNT SOLD / WEEK (QUESTION 8) + SELF-CONSUMED / WEEK (QUESTION 11).</p> <p>IF NOT, ASK THE RESPONDENT TO ADJUST HIS/HER ESTIMATION AND INDICATE BELOW THE REASON FOR THE DISCREPANCY BETWEEN THE TWO CATCH ESTIMATES.</p> <p>YES, THE FIGURES MATCHED.....1<br/>NO, THE ENTRIES WERE ADJUSTED...2</p> |       |        |
|                | NUMBER OF WEEKS  | YES/NO   | PROCESSING TYPE # 1   |                    |                   | PROCESSING TYPE # 2   |  |       | YES/NO |
|                |  | QUANTITY CONSUMED  | FORM OF PACKAGING   | FORM OF PROCESSING | QUANTITY CONSUMED | FORM OF PACKAGING   | FORM OF PROCESSING   |       |        |
| 1.             |  |  |   |                    |                   |   |  |       |        |
| 2.             |  | TEXT:  |   |                    |                   |   |  | TEXT: |        |
| 3.             |  |  |   |                    |                   |   |  |       |        |
| 4.             |  |  |   |                    |                   |   |  |       |        |
| 5.             |  |  |   |                    |                   |   |  |       |        |
|                |  |  |   |                    |                   |   |  |       |        |



**MODULE I: FISHERIES OUTPUT (LAST LOW SEASON)**

**FISHING GEAR RENTED OUT**

|   |                                | 14.<br>During the last LOW fishing season, did your household rent out any [GEAR] to other fishers? | 15.<br>How many [GEAR] did your household rent out during the last LOW fishing season? | 16.<br>For how much in TOTAL did your household rent these [GEAR] out to other fishers during the last LOW fishing season? |
|---|--------------------------------|---|--|--|
|   |                                | YES..1<br>NO...2 >><br>NEXT GEAR  |  | ( THEN >> NEXT GEAR )  |
|   | GEAR                           | YES/NO  | NUMBER OF UNITS  | MK   |
| 1 | usipa (mosquito)net            |   |  |  |
| 2 | kambuzi (beach) seine          |   |  |  |
| 3 | mbedza(long /hand line)        |   |  |  |
| 4 | mbuka /ntaya/ ukonde (gillnet) |   |  |  |
| 5 | mono(fish traps)               |   |  |  |
| 6 | chavi (castnet)                |   |  |  |

**MODULE J: FISH TRADING (LAST LOW SEASON)**

|  |  |  |                 |                     |            |          |                 |                     |            |  |                 |                     |            |          |                 |                  |            |
|--|--|--|-----------------|---------------------|------------|----------|-----------------|---------------------|------------|--|-----------------|---------------------|------------|----------|-----------------|------------------|------------|
| ENUMERATOR:<br>CHECK MODULE<br>C. WERE ANY<br>HOUSEHOLD<br>MEMBERS<br>ENGAGED IN<br>FISH TRADING<br>IN THE LAST<br>LOW SEASON?<br><br><br><br><br><br><br><br><br><br>YES..1<br>NO...2 >><br>END OF<br>QUESTIONNAIRE | 1.<br>Please list up to five main species of fish that you or any member of your household sold as part of your fish trading business.<br><br><u>CODES FOR FISH SPECIES:</u><br><br>MAKAKANI...1<br>MAKUMBA...2<br>MLAMBA...3<br>MATEMDA...4<br>NKUNGA...5<br>CHAMBO...6<br>NYESI...7<br>MCHENI...8<br>OTHER (SPECIFY) .9<br>AGGREGATED.....10 | 2.<br>During the last LOW fishing season, how much [FISH SPECIES] did you or any member of your household purchase from other fishers and/or fish processors on average per week as part of your fish trade business?<br><br>During the weeks of operation, what was the average <u>buying</u> price per packaging unit?<br><br>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.<br><br><u>CODES FOR FISH PACKAGING:</u> <u>CODES FOR PROCESSING:</u><br><br>PIECE .....1                      FRESH.....1<br>DOZEN.....2                      SUN-DRIED..2<br>KILOGRAM.....3                    SMOKED....3<br>5 KG BAG.....4                    ICED.....4<br>10 KG BAG.....5                    OTHER<br>25 KG BAG.....6                    (SPECIFY)..5<br>SMALL BASKET...7<br>LARGE BASKET...8<br>OTHER (SPECIFY) .9 |                 |                     |            |          |                 |                     |            | 3.<br>During the last LOW fishing season, how much [FISH SPECIES] did you or any member of sell on average per week as part of your fish trade business?<br><br>During the weeks of operation, what was the average <u>selling</u> price per packaging unit?<br><br>ENTER AMOUNTS FOR UP TO TWO DIFFERENT TYPES OF PROCESSING. LEAVE TYPE 2 BLANK IF ONLY ONE TYPE OF PROCESSING.<br><br><u>CODES FOR FISH PACKAGING:</u> <u>CODES FOR PROCESSING:</u><br><br>PIECE .....1                      FRESH.....1<br>DOZEN.....2                      SUN-DRIED..2<br>KILOGRAM.....3                    SMOKED....3<br>5 KG BAG.....4                    ICED.....4<br>10 KG BAG.....5                    OTHER<br>25 KG BAG.....6                    (SPECIFY)..5<br>SMALL BASKET...7<br>LARGE BASKET...8<br>OTHER (SPECIFY) .9 |                 |                     |            |          |                 |                  |            |
|  | YES/NO   | PROCESSING TYPE # 1  |                 | PROCESSING TYPE # 2 |            |          |                 | PROCESSING TYPE # 1 |            |  |                 | PROCESSING TYPE # 2 |            |          |                 |                  |            |
|  | FISH SPECIES CODE  | QUANTITY   | FORM OF PACKAG. | FORM OF PROCESS.    | PRICE (MK) | QUANTITY | FORM OF PACKAG. | FORM OF PROCESS.    | PRICE (MK) | QUANTITY   | FORM OF PACKAG. | FORM OF PROCESS.    | PRICE (MK) | QUANTITY | FORM OF PACKAG. | FORM OF PROCESS. | PRICE (MK) |
|  | 1  |  |                 |                     |            |          |                 |                     |            |  |                 |                     |            |          |                 |                  |            |
|  | 2  |  |                 |                     |            |          |                 |                     |            |  |                 |                     |            |          |                 |                  |            |
|  | 3  |  |                 |                     |            |          |                 |                     |            |  |                 |                     |            |          |                 |                  |            |
|  | 4  |  |                 |                     |            |          |                 |                     |            |  |                 |                     |            |          |                 |                  |            |
|  | 5  |  |                 |                     |            |          |                 |                     |            |  |                 |                     |            |          |                 |                  |            |

**MODULE J: FISH TRADING (LAST LOW SEASON)**

|   |   |   |   |  |
|---|---|---|---|--|
| <p><b>4.</b><br/> <b>ENUMERATOR:</b> ARE THE SELLING PRICES IN QUESTIONS 3 GREATER THAN THE BUYING PRICES IN QUESTION 2?<br/><br/>         IF NOT, ASK THE RESPONDENT TO ADJUST HIS/HER ESTIMATION AND INDICATE BELOW THE REASON FOR THE INITIAL ERROR<br/><br/>         YES, THE FIGURES MATCHED...1<br/><br/>         NO, THE ENTRIES WERE ADJUSTED...2</p> |   | <p><b>5.</b><br/>         Did your household have any costs for [COST ITEM] in relation to your fish trading activities during the last HIGH season?<br/><br/><br/><br/><br/><br/><br/><br/><br/><br/><br/>         YES..1<br/>         NO...2 &gt;&gt; 7</p> | <p><b>6.</b><br/>         How much did your household have to pay for [COST ITEM] on a weekly basis during the last LOW season?<br/><br/><br/><br/><br/><br/><br/><br/><br/><br/><br/>         (THEN &gt;&gt; NEXT COST ITEM)</p> | <p><b>7.</b><br/> <b>ENUMERATOR:</b> REFER TO <b>MODULE B: FISHERIES CALENDAR.</b><br/><br/>         IS THE ANSWER TO QUESTION 2 "YES"?<br/><br/><br/><br/><br/><br/><br/><br/><br/><br/><br/>         YES..1&gt;&gt; NEXT MODULE<br/>         NO...2&gt;&gt; END OF QUESTIONNAIRE</p> |
| <p>YES/NO</p>   |   | <p><b>COST ITEM</b></p>   | <p>YES/NO</p>   | <p>AMOUNT (MK / Week)</p>  |
| <p>TEXT:</p>  | <p>1. Hired Labor</p>                       |   |   |  |
|   | <p>2. Transport</p>                         |   |   |  |
|   | <p>3. Packaging</p>                         |   |   |  |
|   | <p>4. Ice</p>                               |   |   |  |
|   | <p>5 Tax</p>                                |   |   |  |
|   | <p>6 Other (Specify)<br/>         _____</p> |   |   |  |



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This publication should be cited as: Béné, C., Chijere Asafu, D.G., Allison, E.H. and Snyder, K. 2010. Uganda and Malawi field pilot of proposed LSMS fisheries module: summary report. The WorldFish Center, Penang, Malaysia. Project Report 2012-16.

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