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MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES

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Mekong Integrated Water Resources Management Project
Phase III – Component 1

TECHNICAL REPORTS

OUTPUTS AND BENEFITS OF THE M-IWRM PROJECT Phase 3, Component 1 *Support for fisheries and aquatic resources management in northern Cambodia*



2022

Inland Fisheries Research and Development Institute

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**OUTPUTS AND BENEFITS OF THE
MEKONG INTEGRATED WATER RESOURCES MANAGEMENT
PROJECT – PHASE 3 COMPONENT 1
(SUPPORT FOR FISHERIES AND AQUATIC RESOURCES
MANAGEMENT IN NORTHERN CAMBODIA)**

2017 BASELINE VS. 2021 ENDLINE COMPARISON

Prepared by the
Inland Fisheries Research and Development Institute
for the
Fisheries Administration

Acknowledgements

The Fisheries Administration, Ministry of Agriculture, Forestry and Fisheries of Cambodia prepared the present report with the support of the Ministry of Economy and Finance of Cambodia and the World Bank Group.

This document is one of the outputs of the project Mekong-Integrated Water Resources Management Project – Phase 3 (M-IWRMP-III) “Support for Fisheries and Aquatic Resources Management in Northern Cambodia” implemented by the Inland Fisheries Research and Development Institute.

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ISBN-13: 978-9924-9676-0-6



Citation:

Fisheries Administration (2022). Outputs and benefits of the Mekong-Integrated Water Resources Management Project – Phase 3 Component 1 (Support for fisheries and aquatic resources management in northern Cambodia) – 2017 baseline vs. 2021 endline comparison. Report for the project “Support for Fisheries and Aquatic Resources Management in Northern Cambodia”. Fisheries Administration and Inland Fisheries Research and Development Institute, Phnom Penh, Cambodia. 51 pages.

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EXECUTIVE SUMMARY

The Mekong Integrated Water Resources Management Phase III project (M-IWRM III) was implemented between 2017 and 2022 to enhance Cambodia's capacity to sustainably manage its water and fishery resources in the northeast of Cambodia. **Component 1 of the project** (Support for Fisheries and Aquatic Resources Management in Northern Cambodia, by IFReDI/FiA) was focused on i) developing Community Fisheries (CFi), including fisheries management plans and demonstration of supplementary livelihood activities, ii) strengthening public sector fishery management, and iii) providing support for local government capacity building and rural infrastructure. 8,862 households in 70 CFI in Kratie and Stung Treng Provinces received project support.

A baseline survey was conducted in late 2017 and an endline survey was conducted in early 2021. The present document is focused on assessing the outputs and benefits of the project.

Background. A relatively small percentage of CFI household members (21%) consider themselves to be full-time fishers. All CFI households report that the main sources of household income comes from a mix of fishing (25%) and agriculture practices (crops 35%, orchards 29%, livestock 27%), although CFI households report slightly more income from agriculture practices than fishing. The respondents reported an increase in doing aquaculture and in processing fish.

Improved Community Fishery governance. CFI governance clearly improved over the course of the project, with 90 to 97% of CFI now having by-laws and internal regulations; identified boundaries and map of the community fishing area; a community fishing area agreement; registration and recognition by MAFF; a community fishing area management plan; rules and regulations against illegal fishing; and having a conservation area. The two points remaining weaker are i) an activity plan for the next six months (84%) and ii) a mechanism to resolve conflicts (62%).

Respondents are very positive about improved CFI governance, as illustrated by an increase over time in the number of meetings per year, an improved coordination with the Commune Council and Fisheries Cantonment, better networking with other CFI and organizations, more engagement in fund raising, more success in fund raising, diversification of funding sources (especially from NGOS), and transparency of financial records. The respondents were also well satisfied with CFI management, reporting an increase in participation in CFI activities, well managed finances, elections open to everyone, and transparent decision-making over the baseline. Ninety-seven percent (97%) of respondents also report that the local administration was helpful for assistance and conflict management.

Socioeconomic and food security benefits. One hundred percent (100%) of interviewees report that the CFI benefits them both socially and economically. The share of fishing in the household income decreased in the past 5 years (from 32% down to 25%) but was compensated by livestock farming (from 19 to 27%). CFI households also report that less of their protein intake now comes from fish, and that the fear of not enough fish or food to meet their family needs has decreased. Interviewees also flag a need for assistance for better methods for processing fish and more technical training on aquaculture.

Resource management. During the baseline survey, 42% of households consulted described the condition of fish stocks as bad; this figure had dropped to 32% in the endline survey. Similarly, 10% of respondents estimated that fish stocks were good at the beginning of the project, and they were 23%

at the end. Respondents felt that conservation areas are good and that fisheries conflicts have been reduced. Ninety-one percent (91%) report that the CFI has improved the fish stock. Seventy-six percent (76%) reported that the CFI has good and sustainable fisheries management. Ninety-seven percent (97%) feel that the CFI has improved fish habitats. Among CFI households, 84% expect that the fishery will maintain its current level of productivity over the next five years. All in all, 2017 and 2021 surveys show a reduction in the percentage of respondents reporting that fish catch had decreased in the last five years, but this did not translate into a perception that the catch had increased.

Illegal fishing and threats to the resource. The CFI households have reported that there has been a significant decrease in illegal fishing over the life of the project, with 87% of respondents reporting a perceived decreasing trend in illegal fishing. A vast majority of the CFI households report that the government (97%) and CFC (99%) are taking action to address illegal fishing. Ninety-seven percent (97%) of respondents felt that there was good enforcement. This could be attributed to increased patrols due to the provision of boats and equipment for patrolling, training, and funds to conduct patrols. However, bomb fishing and illegal fishing in the breeding season and in prohibited areas continues to be a problem. In addition, while illegal fishing has been reduced and enforcement improved, respondents felt that the CFI was less able to punish offenders, either formally or informally, at the end of the project. The main threats to the fishery in the endline survey include illegal fishing gears and practices, natural issues such as climate change, and population growth/more fishers. The suggested approaches to improve fisheries management include prevent illegal fishing, more conservation areas, and more patrolling and enforcement.

Gender and ethnic minorities. There has reportedly been a slight increase in the number of women members of the CFI and CFC. However, these numbers may not be reliable as other project reports indicate a much higher percentage of women participating in the CFI and CFC. The ex-ante / ex-post study also reflects the effective training conducted and exposure that has improved respondents understanding of gender; there is now a high positive perception about the active participation of women in the CFI. Yet CFI households report that participation of women needs to more supported and encouraged through more education and training on gender and participation of women. CFI households also indicate that participation of indigenous people needs to be further supported and encouraged.

Conclusions and recommendations. Overall, the respondents in the endline survey felt that the project was beneficial to them. This was reflected in overall improvements in the CFI and CFC operation and administration, and in governance and resource management. The respondents also reported overall social and economic benefits from CFI membership. The following are *key recommendations* to maintain and enhance the project outputs and benefits:

1. Ensure that each CFI has a financial sustainability plan to achieve long-term CFI viability and sustainability;
2. Enhance capacity; through, for example, technical training; to continue to diversify livelihoods of all CFI households as fishing is a livelihood and income source for a decreasing percentage of the households and all households rely on a mix of livelihood and income sources, such as agriculture, fish processing and aquaculture;
3. Utilize the Stung Treng fish hatchery to enhance aquaculture as a household livelihood option through provision of production inputs and technical assistance;

4. Strengthen CFi and CFC capacity to manage the fisheries and to serve its member's needs, through training and technical assistance, on administration (i.e. funding, roles and responsibilities), fisheries and ecosystem management, conflict management, and compliance and enforcement;
5. Illegal fishing is the most important fishery issue; continue capacity building and put resources into enforcement and compliance activities such as patrolling;
6. Improve capacity to punish offenders of fishing laws and regulations through both formal and informal ways;
7. Enhance the participation of women and indigenous people in all CFi activities and as members of the CFC through encouragement and support and education and training;
8. Improve coordination and cooperation among government, non-governmental organizations and donors on support and activities to CFis and CFCs.

1. INTRODUCTION

The objective of the Mekong Integrated Water Resources Management Phase III project (M-IWRM III) was to enhance Cambodia's institutional capacity and infrastructure to sustainably manage its water and fishery resources in the northeast of Cambodia, and thus more effectively engage in trans-boundary water management. The project was implemented in the Mekong River Basin in Northeast Cambodia and the implementation duration of the project spanned over 5+1 years (2016-2022).

The Project consisted of two components:

- **Component 1:** Support for Fisheries and Aquatic Resources Management in Northern Cambodia managed by IFReDI/FiA as Implementing Agency.
- **Component 2:** Support for River Basin Management in the 3S sub-basin and 4P sub-basin and Coordination with riparian Countries in Northern Cambodia managed by CNMC as Implementing Agency.

Component 1 had the following general objectives:

- establishment of community-based fisheries management organizations including development of fisheries management plans and demonstration of supplementary livelihood activities;
- strengthening public sector fishery management including monitoring, enforcement of regulations, and supporting indigenous species aquaculture and stocking.
- Providing support for local government capacity building and rural infrastructure.

Among natural resources in the Mekong River, capture fisheries are of particular importance for the communities along the Mekong and its tributaries. With the river's large flood pulse, abundant wetlands and estuaries, fisheries in the Mekong have been productive, and have always been the main livelihood for the local population. Based on Mekong River Commission (MRC) estimates, capture fisheries in the Mekong are valued at USD 2-3 billion. Reportedly, more than two-thirds of about 800 fish species migrate between the Mekong Delta in Vietnam and northern Lao PDR, and all species are significantly affected by flow regimes and water quality. In this context, fisheries management is considered to be a part of the larger water resources management in the Mekong Basin.

Component 1, managed by IFReDI/FiA, aimed to establish sound fisheries management in the mainstream Mekong between Kratie and Stung Treng in Northern Cambodia where a significant number of critical habitats are located.

The key stakeholders involved with this component were: The Fisheries Administration (FiA), The Ministry of Water Resources and Meteorology (MOWRAM), provincial FiA, community fisheries (CFi), technical institutions, community groups, and civil society organizations.

In order to assess the overall performance of the project, a Monitoring and Evaluation (M&E) system was put in place. This M&E includes a component on the impact of the project activities on socioeconomics, governance and ecological performance of Community Fisheries (CFi). This implies a comparison of the situation in each CFi at time t_0 in particular at the beginning of the project and at time t_n in particular at the end of the project. A baseline survey was conducted in late 2017 and an

endline survey was conducted in early 2021. The present document is focused on project intervention benefits. The main objective of the questions asked during the baseline and the endline surveys was to compare for each CFI assisted by the project the situation at the beginning and at the end of the project.

This report includes four sections. The Method section (section 2) below describes the methodology for data analysis. This is followed by the Results section (section 3) where individual questions and answers are detailed. Section 4 is a discussion of governance, threats, and recommendations. The final section consists in conclusions and recommendations.

2. METHOD

The baseline survey was initiated in September 2017. It included the following steps: i) preparatory activities; ii) development of questionnaire, coding, and database creation; iii) training of interviewers (19 provincial fisheries officers) and questionnaire pre-test; iv) field data collection (October to December 2017); v) data encoding (January to April 2018); vi) development of a book of questions for data analysis; and vii) data analysis (June to September 2018). That analysis resulted in a first assessment report released in October 2018 (Fisheries Administration 2018¹).

The baseline assessment targeted a sample of 1200 households randomly selected in the two provinces, including both CFI and non-CFI member households. This included households that would and would not be selected for assistance by the project. A total of 1,181 households were surveyed in 117 Community Fisheries (Table 1). The baseline survey was shaped by: i) the objective to provide an overview of the socioeconomic situation and fish-related livelihoods in the two provinces in order to guide CFI selection, ii) the intention to also produce enough data to potentially allow an analysis of project impacts later on; and iii) the constraint of having to implement a large scale survey without knowing, at that early stage, which would be the CFI and households selected later on for project assistance. Thus, this survey covered 762 community fishing households and 419 non-community fishing households.

¹ Fisheries Administration (2018). Baseline Survey of Fishing Households in Kratie and Stung Treng Provinces. Report for the project “Support for Fisheries and Aquatic Resources Management in Northern Cambodia”. Fisheries Administration and Inland Fisheries Research and Development Institute, Phnom Penh, Cambodia. 69 pages.

Table 1: Villages and CFi surveyed

Province	District	Commune	Community Fisheries	Village
Stung Treng	Seam Bok	6	16	16
	Thalaborivat	6	25	27
	Say san	4	5	11
	Seam Bang	2	1	3
	Stung Traeng	1	4	3
<i>Sub-total</i>	5	19	51	60
Kratie	Kratie	3	3	6
	Sombo	7	27	27
	Chet Borey	6	11	12
	Chhloung	5	5	11
	Snuol	4	5	6
	Preak Brosob	7	15	20
<i>Sub-total</i>	6	32	66	82
<i>Total</i>	11	51	117	142

The project implementation resulted in the selection of 70 CFi among 117 to receive infrastructure support (64 CFi that existed before the project and 6 newly created during the project). This corresponds to 4,263 households in 35 CFi in Kratie Province and 4,599 households in 35 CFi in Stung Treng Province. Thus, in total 8,862 households were registered as CFi members in 70 CFi of both provinces during the project implementation.

The endline assessment was conducted in 32 CFi in the two provinces. That coverage of 32 CFi was decided as the maximum doable sampling effort given financial and logistical constraints, while representing 50% of the 64 existing CFi initially supported. The survey was implemented in February 2021 by 26 surveyors from IFReDI, CFDD, PITs in Kratie and Stung Treng, and two consultants. The method and questionnaires were the same as those used for the 2017 baseline survey.

This 2022 ex-ante/ex-post data analysis is based on (Figure 1):

- i) an identification of the households that were interviewed in 2017 as part of the baseline survey and became supported by the project.
- ii) a sampling of 32 CFi based on their rating during the project CFi selection process for assistance (top/middle/bottom rating corresponding to high/medium/low governance, socioeconomic and environmental potential; see companion report “CFi selection” in the same series²). This sampling was meant to ensure that all types of CFi were represented in the data. The sampling of CFi by ecozone, temporarily envisaged, was abandoned as an ecozone represents an ecological criterion only.
- iii) in each of the 32 CFi selected, 10 households interviewed in 2017 were selected for a new interview in 2021 (while acknowledging minor variations during the actual survey). Thus, the endline sampling is based on 320 households in total.

² Fisheries Administration (2019). Selection of Community Fisheries for project support. Report of the project “Support for Fisheries and Aquatic Resources Management in northern Cambodia”. Fisheries Administration and Inland Fisheries Research and Development Institute, Phnom Penh, Cambodia. 39 pages.

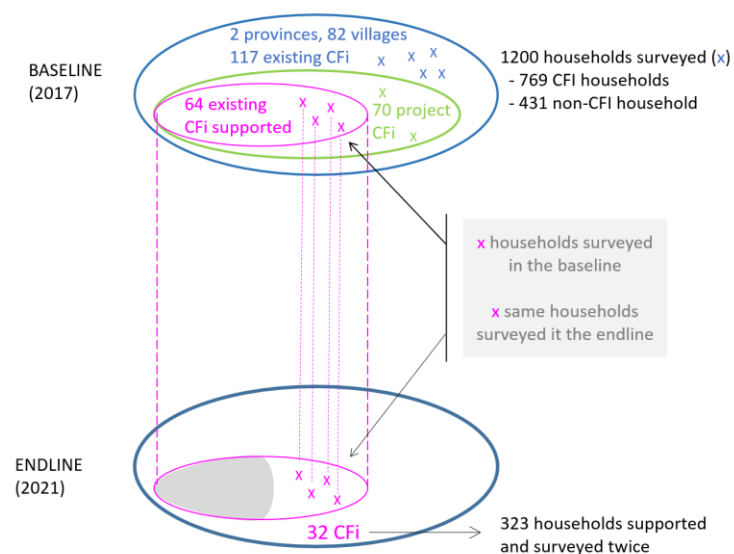
- iv) an endline survey of 323 households (including 10 in Russey Keo for questionnaire testing). These 323 households belong to 32 CFI (17 in Kratie, 15 in Stung Treng; see Table 2). In total, these 323 households interviewed represent 44% of all households supported. This survey provided the endline dataset of the before/after analysis. Thirty-five percent of women were interviewed during the endline survey. Along with these, 13% of interviewees qualified as Indigenous people (IP) were also covered in the endline survey.
- v) a sub-sample of the baseline data with the answers, in 2017, of the 323 household members surveyed again in 2021 (348 records minus 15 test households). This subsample provided the baseline dataset of the before/after analysis. These households represented 1,413 persons during the baseline survey and 1,499 persons during the endline survey.

Table 2: CFI assessed during the endline survey and number of interviewees in each

Province	Commune	CFI Name	Number of interviewees	Women interviewed	Indigenous interviewees
Kratie	Kampong Cham	Ampil Teuk / Anlong veal proloung duong chet	10	6	0
	Koh Khnhaer	Anlong Kamnob	11	6	0
	Voadthonak	Anlong Preah Kou	10	1	0
	Kampong Cham	Kampong Krabei	10	2	0
	Boeung Char	Kampong Roteh	10	5	8
	Kanh Chor	Kanh Chor	8	0	0
	Ou Krieng	Khsach Leav	10	3	10
	Boeung Char	Koh Dambang	10	4	10
	Boeung Char	Ou Krasaang	5	0	5
	Prek Prasob	Ou Lung	11	3	0
	Voadthonak	Prek Krieng	9	3	0
	Bos Leav	Prek Ta Am	10	4	0
	Russey Keo	Russey Keo	10	1	0
	Sambok	Sambok	12	7	0
	Saob	Saob Leu	11	1	0
	Sambour	Tomnub Pak	10	3	0
	Voadthonak	Voadthonak	10	5	0
Stung Treng	Preah Rumkel	Anlong Svay	12	3	0
	Ou Rey	Anlong Svay	8	3	0
	Samaki	Anlong Thmor Bang	10	3	0
	Thalaborivat	Kang Cham / Kangkngaok	10	3	7
	Koh Sampeay	Koh Sampeay	10	5	0
	Preah Rumkel	Kralapeas	12	5	0
	Ou Mreah	Ou Chralang	10	6	3
	Ou Mreah	Ou Mreah	10	0	0
	Phluk	Phluk Meanchey	12	7	0
	Preah Rumkel	Phum Leu	11	5	0
	Ou Rey	Pong Teuk	8	1	0
	Talat	Samaki Rung Roeung	7	1	0
	Sdao	Sdao2	12	6	0
	Thalaborivat	Veal Khsach	12	7	0
	Ou Svay	Veun Sean	12	3	0
Total			323	112	43

Note: Russey Keo was surveyed to test the questionnaire

Figure 1: Principles of the ex-ante / ex-post sampling for impact assessment



Ten classes of indicators were used in this study to analyze the impacts of the project: fishing, aquaculture and processing activities; income; food and nutrition; CFI governance; gender and indigenous people; satisfaction about CFI management; and perceived social and environmental benefits from management.

In total, the monitoring and evaluation was done using 59 indicators:

- Fishing activities: 6 indicators
- Aquaculture activities: 5 indicators
- Processing activities: 2 indicators
- Income: 7 indicators (including indicator about fishing, aquaculture and processing)
- Food and nutrition: 8 indicators
- CFI governance: 13 indicators
- Gender and indigenous people: 5 indicators
- Satisfaction about CFI management: 4 indicators
- Social and environmental benefits from management: 9 indicators

This is supplemented with questions about extension services as part of the FiA's contribution to co-management.

3. RESULTS

3.1. Main patterns in activities, income and food security

This section presents results on fishing, aquaculture, income, nutrition, CFI governance, gender and minorities, benefits of management, satisfaction with CFI management and extension services. The numbers refer to the numbering of questions in the questionnaire. The questions are those from both the questionnaire (first) and the book of questions (second) used to direct the data analysis.

3.1.1. Fishing activity

Comparison of the percentage of CFI household members involved in full-time fishing activities

Table 3: CFI households involved in full-time fishing activities

	Percentage
Baseline	20.9%
Endline	19.0%

Among households of the CFI involved in the project only 21% of household members were involved in *full time fishing* during the baseline. During the endline survey this value reached 19%, which is not considered to be a significant change during the time period.

Comparison of the percentage of CFI household members involved in part-time fishing activities

Table 4: CFI households involved in part-time fishing activities

	Percentage
Baseline	15.8%
Endline	16.0%

Among households of the CFI villages involved in the project, only 16% of the household members were involved in *part-time fishing* during the baseline. During the endline survey, this figure remained the same.

3.1.2. Aquaculture activities

Evolution in the percentage of households that practice aquaculture

Table 5: Percentage of CFI households practicing aquaculture

	Percentage
Baseline	2.7%
Endline	14.4%

In the baseline survey, only 2.7% of CFI households were practicing aquaculture. In the endline survey, the percentage of households that practice aquaculture had increased substantially up to 14.4%. The increase reflects the project intervention on the development of aquaculture through the provision of livelihood enhancement grants.

Evolution of the quantity of fish produced per season among households doing aquaculture

Table 6: Average fish production per season among CFI household doing aquaculture

	Average fish production (Feb - April)	Average of fish production (May - July)	Average of fish production (Aug - Oct)	Average of fish production (Nov - Jan)
Baseline	185.00	30.20	48.70	64.00
Endline	58.96	16.56	27.80	29.93
Difference	-68.1%	-45.2%	-42.9%	-53.2%

For CFI households practicing aquaculture, the average production for each of the four seasons decreased between the baseline and endline time periods. This may be due to an increased number of households practicing aquaculture and a lower average production per household as they are new to aquaculture.

3.1.3. Processing activities

Comparison of percentage of households that process fish

Table 7: Households that process fish

	Percentage
Baseline	59.8%
Endline	73.6%

In the baseline survey 60% of CFI households processed fish. This number increased to 74% in the endline survey. This is likely related to the impact of COVID in 2020 and the difficulty for fishers to export their fish to cities as they had done before COVID, hence the increase in local smoking and drying to be able to store the fish.

Comparison of the fish biomass processed per week per season per household

Table 8: Fish biomass processed per week per season per household

	Average amount of fish processed per week (Feb – April)	Average amount of fish processed per week (May – July)	Average amount of fish processed per week (Aug- Oct)	Average amount of fish processed per week (Jan – Nov)
Baseline	13.7	13.8	7.0	10.9
Endline	9.9	18.9	8.7	9.1

The production of smoked fish is around 45 kg per household in the baseline survey and has not changed over the life of the project. Processing varies seasonally, with a minimum during the rainy season.

By comparison, 2016 data from the WorldFish Valuation project (Mousset et al. 2016³) indicate an average of 59 kg of fish processed by household per year (including fish bought, which is less likely in the remote CFI of the project).

3.1.4. Income

Comparison of percentage of income by activity

Table 9: Percentage of income estimated to come from different primary sector activities

Activity	Baseline	Endline
Fishing	32.0%	24.8%
Crop production	32.1%	35.0%
Livestock farming	19.1%	26.5%
Orchard production	27.0%	29.4%
Gathering	6.9%	4.3%
Activities related to fishing	7.3%	8.2%
Aquaculture	15.0%	13.5%

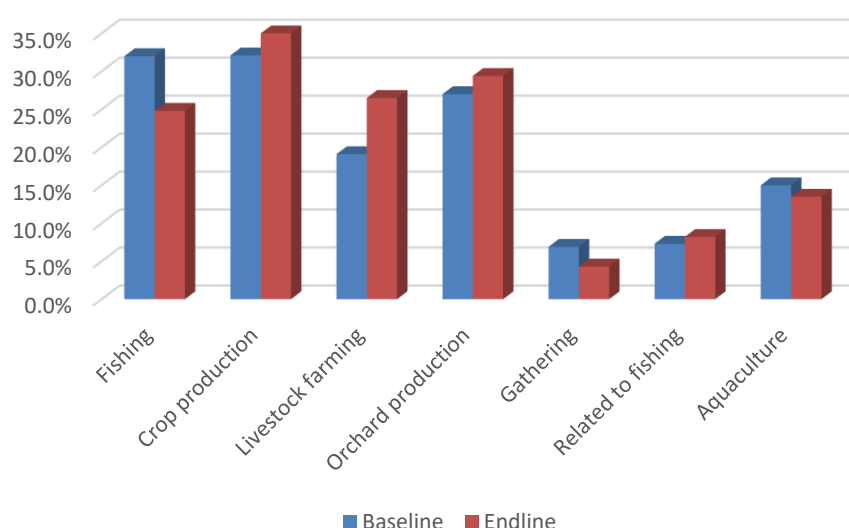


Figure 2: Comparison of primary sector activities in Baseline and Endline surveys

For all CFI households surveyed, fishing and crop production both provided about one-fourth to one-third of the income. Fishing declined by 7% between the baseline and endline surveys as households moved to agricultural activities. The source of income that increased over time is livestock production, from 19 to 26%. Aquaculture contributes around 14% of the income (the Stung Treng hatchery was not operational yet and could not contribute to aquaculture production increase), with no major change over time – despite a decrease in the biomass produced highlighted above. The role of gathering decreased, as interviewees underline the progressive loss of access to wild resources.

³ Mousset E., Rogers V., Saray S., Ouch K., Srey S., Mith S, Baran E. 2016. Roles and values of fish in rural welfare in Cambodia (welfare data analysis). Inland Fisheries Research and Development Institute (Fisheries Administration) and WorldFish. Phnom Penh, Cambodia. 101 pp.

Comparison of the estimated role played by fish in households' income

Table 10: Percentage of CFI household's income believed to come from fish and fishing

Percentage of income coming from fish and fishing	
Baseline	30.0
Endline	24.8

A cross-checking of responses confirms previous answers and indicates that CFI households stated that 30% of their income used to come from fishing, and that this income decreased by 5% to 25% over the course of the project.

3.1.5. Food and nutrition

Evolution of the estimated contribution of fish and fishing to protein supply

Table 11: Percentage of CFI household's protein supply estimated to come from fish and fishing

Percentage of income comes from fish and fishing	
Baseline	72.8
Endline	69.1

During the baseline, CFI households reported that 73% of the meat (protein) that they eat comes from fish and fishing. This reportedly decreased to 69% in the endline survey. The reduction of the role of fish in protein supply reflects the reduced share of fishing in income reported elsewhere and the increase in agricultural activities.

Evolution per season of the fear that there is not enough fish to meet the family needs

Table 12: Percentage of CFI households that fear there is not enough fish to meet family needs per season

	Dry season (Feb – April)	Flooding season (May – July)	Flood/rainy season (Aug- Oct)	Flood recession season (Jan – Nov)
Baseline	89.3	91.9	73.2	91.9
Endline	15.8	12.3	22.3	12

For all CFI households and over the course of the project there was a substantial reduction in the fear of not having enough fish to eat from 87% during the baseline to 16% during the endline. This contradicts the claimed reduction in fish catch, but probably reflects answers related to overall food security rather than fish-related security only (more availability of poultry following livelihood grants). This can also be related to increased processing for local storage in the context of transport restrictions following the COVID pandemic in 2020-2021.

Evolution in the percentage of households who worry that in the past four weeks they would not have enough food or have to cut on portions / quality

Table 13: Number and percentage of households who worry that in the past four weeks they would not have enough food or have to cut on portions

	Baseline	Endline
Never	36%	52%
Sometimes	44%	36%
Often	12%	5%
Daily	9%	6%

There is a reported improvement between the baseline and endline surveys, respectively, with those who reported ‘never’ worrying about not having enough food increasing from 36% to 52% and those who ‘sometimes’ worry decreasing from 44% to 36%. This could be due to the diversification of food production activities of households.

3.2. Community Fishery Governance

3.2.1. Performance of Community Fisheries

CFi households’ perceptions on CFI governance

Table 14: Comparison of answers from CFI households interviewed about CFI governance

	Baseline	Endline
CFI having by-laws and internal regulations	84%	95%
CFI having completed mapping of the community fishing areas	66.4%	96.6%
CFI having a Community Fishery Area Agreement	76.3%	93.5%
CFI registered and recognized by FiA	58.6%	90.1%
CFI having a management plan	66.7%	94.9%
CFI having rules and internal regulations <u>for fisheries management</u>	84.3%	95.2%
CFI having rules and regulations against illegal fishing	71.3%	96.6%
CFI having an activity plan for the next six months	43.7%	83.6%
CFI having a conservation area	76.3%	94.2%
CFI having a mechanism to resolve conflicts	35.3%	61.6%

For every topic on CFI governance, there was an increase in the perception of improved governance from the baseline to the endline survey. This indicates an improved understanding of CFI governance by households as a result of project interventions such as training and meetings and by increased participation in the CFI.

Evolution in the average number of annual meetings between CFC and CFI members

Table 15: Average number of annual meetings between CFC and CFI members

Average number of annual meetings between CFC and CFI members	
Baseline	2.9
Endline	10.8

During the 2018 baseline survey, the average number of CFI meetings was 3 per year. This increased significantly to 11 meetings per year at the end of the project as reported in the endline survey.

Evolution in the percentage of households reporting that the CFC *does* coordinate with commune council or the Fisheries cantonment

Table 16: CFI households that report CFC does coordinate with commune council or fisheries cantonment

	"No coordination"	"Coordination"	"Do not know"
Baseline	2%	73%	25%
Endline	0%	97%	3%

In the baseline survey 73% of CFI households reported that the CFC did coordinate with the Commune Council or the Provincial Fisheries Cantonment. This number increased significantly to 97% in the endline survey.

Evolution in the percentage of households reporting that the CFC *does* develop networks with other CFI and organizations

Table 17: CFI households that report CFC does develop networks with other CFI and organizations

	"Yes, networking"	"No networking"	"Do not know"
Baseline	51%	8%	41%
Endline	80%	3%	16%

At the beginning of the project fifty-one percent of the CFI households reported that the CFC did develop networks with other CFIs and organizations; this number reached 80% at the end of the project.

The increases in the number of the CFI meetings, the coordination between CFI with commune council and Fisheries Cantonment, and networking with other CFIs indicates that the CFI are implementing their management plan properly in the course of project implementation.

Evolution in the percentage of households reporting active fund raising by the CFC

Table 18: CFI households that report active fund raising by CFC

	"Active fund raising"	"No fund raising"	"Do not know"
Baseline	39%	14%	47%
Endline	87%	2%	11%

Thirty-nine percent of the CFI households reported in the baseline survey that the CFC engaged in active fund raising (47% not knowing). In the endline survey, the percent of household reporting that the CFC engages in active fund raising increased significantly to 87% with only 11% reporting not knowing.

Evolution in the percentage of households reporting that the CFC is somewhat successful at raising funds

Table 19: CFI households reporting that the CFC is somewhat successful at raising funds

	“Successful fund raising”	“Unsuccessful fund raising”	“Do not know”
Baseline	29%	19%	52%
Endline	89%	2%	9%

Twenty-nine percent of CFI households reported in the baseline survey that the CFC was somewhat successful in raising funds and 52% did not know. In the endline survey, that percentage increased significantly to 89% with only 9% reporting not knowing.

Evolution and diversification in the number of sources of funding

Table 20: Percentage of each source of funding according to CFI households

	Baseline	Endline
No funding	16.2%	0.2%
Government	1.7%	58.7%
NGO	21.6%	35.7%
Donor	0.3%	0.4%
People	6.0%	0.2%
Unknown	54.3%	2.6%
Other	-	2.2%

At the beginning of the project, 16% of CFI had no source of funding; this figured dropped down to zero at the end. The sources of CFI funding also evolved, from 2% of government assistance initially to 59% at the end of the project, and from 22% from NGO to 36% at the end. The change also reflects a reduction of the rate of ignorance about funding among CFI members, from 54% to 3%, and an awareness of sources of funding increased from 46% to 93%.

Evolution in the percentage of households thinking that the finances record of the CFI are available for all members to examine

Table 21: CFI households and finances record of the CFI available for all members to examine

	“Available”	“Not available”	“Do not know”
Baseline	29.3%	7.2%	63.5%
Endline	89.8%	1.6%	8.7%

In 2018, 29% of households indicated that CFI financial records were available for all members to examine. This figure increased to 89% at the end of the project.

Evolution in the percentage of households provided with information from extension agents

Table 22. Percentage of households who received information from extension agents

	Information received	Information not received	Do not know
Baseline	70.1%	29.9%	-
Endline	84.9%	14.4%	0.7%

At the beginning of the project, 70% of respondents reported that they had been provided with information from extension agents. This increased to 85% in the endline survey.

Evolution in the percentage of households who feel that the local administration is helpful for assistance and conflict management

Table 23. Percentage of households feeling that the local administration is helpful

	Administration helpful	Administration not helpful	"Do not know"
Baseline	88.1%	11.9%	-
Endline	96.6%	3.4%	-

In the baseline survey, 88% of respondents reported that the local administration was helpful for assistance and conflict management. This increased to 97% in the endline survey.

3.2.2. Gender and indigenous people

Evolution in the proportion of women in the CFI

Table 24: Proportion of women in the CFI

	Percentage
Baseline	4.2%
Endline	7.5%

The proportion of women members of the CFI doubled over the life of the project from 4% at the beginning of the project to 8% at the end.

Note: The number of women in the CFI could be higher. The respondents may not have been fully aware of the actual number of women members of the CFI. The quarterly project reports indicate that the numbers of women participating in CFI activities and in workshops, trainings and other awareness raising events have been more than 50% of the participants.

Evolution in the proportion of women in the CFC (i.e. CFI committee)

Table 25: Proportion of women in the CFC

	Percentage
Baseline	3.5%
Endline	7%

Despite remaining relatively low at 7%, the proportion of women members of the Community Fisheries Committees doubled over the life of the project.

Note: The project administration records indicate that the actual percentage of women members of CFC is 24%, not 7% as per estimates of the endline survey. This difference could be attributed to the respondents not being fully familiar with the number of women in the CFC.

Evolution in the percentage of households that have received training or awareness raising on gender

Table 26: Percentage of household that received training or awareness raising on gender

		No gender raining	Gender training	Do not know"
All villagers	Baseline	19.5%	53.7%	26.7%
	Endline	6.2%	86%	7.7%
CFI households	Baseline	20.6%	64%	15.3%
	Endline	6.2%	86.6%	7.2%

Among CFi households in the baseline survey, 21% report that they had not received training or awareness raising on gender, and 15% were unsure. In the endline survey, the proportion of CFi households having received gender training reached 87%, and only 7% were unsure about gender training received. Proportions are similar among CFi members and all villagers, showing that gender training benefited to all.

Evolution in the percentage of households who think that women do participate actively in CFi activities

Table 27: Perception about an active participation of women in the CFi

	No active participation	Active participation of women	Unknown
Baseline	31.8	62.1%	6.1%
Endline	3.4%	96.9%	0

Over the life of the project, the percentage of respondents reporting that women actively participated in the CFi increased from 62% in the baseline survey to 97% in the endline survey. This is despite the low proportion of women in the CFi reported in Table 27.

In villages with indigenous people, evolution in the percentage of households thinking that indigenous people participate actively in CFi activities

In baseline and endline surveys, 32-38 villages out of 43-44 are characterized by the presence of indigenous people. The following question is detailed for these villages only.

Table 28: Percentage of households thinking that indigenous people participate actively in CFi activities

	"Yes"	"No"	"Do not know"
Baseline	30%	41.9%	28.4%
Endline	40.3%	48.8%	11.0%

In villages with indigenous people, the percentage of respondents reporting that the indigenous people participated actively in CFi activities increased from 30% to 40% over the life of the project. However, the percentage of respondents reporting that indigenous people do not actively participate in CFi activities increased by 7%.

Note: In the Livelihood Enhancement Manual, the project has provided motivation for indigenous people to participate in the project by adding one additional score for the IP family to receive a Livelihood Sub-Grant.

3.2.3. Overall satisfaction about CFI management

Evolution in the percentage of households who think their participation to the CFI operation is satisfactory

Table 29: Percentage of CFI households that think that their participation to the CFI operation is satisfactory

Satisfactory participation to CFI	
Baseline	78.9%
Endline	90.8%

The percentage of CFI households that feel that their participation in the operation of the CFI is satisfactory increased from 79% in the baseline survey to 91% in the endline survey.

Evolution in the percentage of households thinking that the CFC manages finances well

Table 30: CFI households thinking that CFC manage finance well

	Finance well managed	Finance poorly managed	Do not know
Baseline	39.5%	8.1%	52.5%
Endline	91.8%	0.7%	7.5%

The percentage of CFI households reporting that they feel that the CFC manages finances well increased from 40% in the baseline survey to 92% in the endline survey. The percent of respondents that “do not know” decreased from 53% to 8% over the life of the project. The increase in the percentage of respondents reporting that the CFC manages finances well can be attributed to a series of training on financial management that the project conducted through the implementation of the livelihood enhancement activities, small-scale infrastructure, and community fisheries activities (C-DIET).

Evolution in the percentage of households estimating that elections and re-elections for the CFC were open to everyone

Table 31: CFI households estimating that the elections and re-elections for the CFC were open to everyone

	“Open elections”	“Elections not open”	“Do not know”
Baseline	78.9%	8.8%	12.3%
Endline	96.6%	1.4%	2.1%

The percentage of CFI households reporting that elections for the CFC were open to everyone increased from 79% at the beginning of the project to 97% at the end of the project

Evolution in the percentage of households estimating that decisions by the CFC are made openly or transparently

Table 32: CFI households considering that CFC decisions are open/transparent

	Transparent elections	No transparent elections	“Do not know”
Baseline	71.6%	4.0%	24.4%
Endline	97.8%	0.3%	1.9%

At the beginning of the project, 72% of CFI households reported that CFC decisions were open/transparent. At the end of the project, this increased to 98%. The percentage of respondents that reported “do not know” decreased from 24% to 2%.

3.3. Resource management

3.3.1. Illegal fishing and conflicts

Evolution in the percentage of households thinking that the government is taking effective action to reduce illegal fishing

Table 33: CFI households' opinion about the government taking effective action to reduce illegal fishing

	"Not taking action"	"Taking action"	"Do not know"
Baseline	7.7%	92.3%	-
Endline	0.7%	96.6%	2.7%

Ninety-two percent of CFI households reported that the government was taking significant action to reduce illegal fishing in the baseline survey. That number increased to 97% in the endline survey.

Evolution in the percentage of households thinking that the Community Fisheries Committee works to reduce illegal fishing

Table 34: CFI households' opinion about Community Fisheries Committees working to reduce illegal fishing

	"Not working"	"Working"	"Do not know"
Baseline	6.5%	90.8%	2.7%
Endline	0%	98.7%	1.4%

During the baseline survey, 91% of interviewees felt that their Community Fisheries Committee was working to reduce illegal fishing; this number went up to 99% by the end of the project. Conversely, the percentage of unconvinced people dropped from 6.5% to 0%.

Ability of the CFI to punish offenders

Table 35: CFI households' belief in the ability of the CFI to punish offenders

	No ability	Yes, formally	Yes, informally	Unknown
Baseline	0.8%	24.1%	40.2%	34.9%
Endline	51.0%	19.2%	7.5%	22.3%

The perception about the ability of the CFI to punish offenders diminished over the life of the project, in particular the ability to informally punish them (from 40% down to 8%), together with a reduced ability to formally punish them (from 24% to 19%). At the end of the project, 50% more people reported that the CFI was **not** able to punish offenders compared to the beginning of the project. These results indicate a reduction of informal punishment without replacement by formal punishment and raises questions about enforcement.

Perceived trend in illegal fishing

Table 36: Perception of CFI households about trends in illegal fishing activities

	Increased	Decreased	Same	Unknown
Baseline	33.0%	34.9%	21.1%	11.1%
Endline	4.5%	86.6%	6.5%	2.4%

During the baseline survey, 35% of CFI households reported that illegal fishing activities had decreased; that figure went up to 87% in the endline survey, indicating progress in enforcement. This is not necessarily a contradiction with the previous result, as the number of offenders could go down but the ability to punish these remaining offenders could have been reduced as well. The percentages of respondents with no opinion decreased from 11 to 2%.

Evolution in the percentage of households reporting enforcement against illegal fishing (cross-checking)

Table 37: CFI households reporting about enforcement against illegal fishing

	"No enforcement"	"Some to good enforcement"	"Do not know"
Baseline	14.6%	76.7%	8.8%
Endline	1.0%	96.9%	2.1%

In 2017, 15% of CFI households reported no enforcement against illegal fishing; this figure dropped down to 1% in 2021. "Some to good enforcement" against illegal fishing increased from 78% to 97% during the life of the project. This was due to the provision of boats and equipment for patrolling and funds to conduct patrols.

3.3.2. Status of the resource

Evolution in the percentage of households who declare that the fish catch respectively increased or decreased in quantity or value

Table 38: Percentage of CFI households declaring that the fish catch changed in quantity or value

	Increased catch	Decreased catch
Baseline	40.6%	53.0%
Endline	34.3%	45.1%

Among CFI households interviewed during the baseline survey, 53% thought that the fish catch had decreased in the last five years. At the end of the project, this proportion was reduced to 45%. However, this result did not translate into a perception of respondents feeling that the catch had increased, with a slight reported decrease (41% during baseline, 34% during endline).

Evolution in the percentage of households thinking that the conservation areas are useful for the conservation of the fishery

Table 39: Percentage of CFI households declaring that conservation areas are useful

	Conservation useful	Conservation not useful	Do not know
Baseline	84.7%	5.4%	10.0%
Endline	96.2%	2.1%	1.7%

Among CFI households, 85% reported during the baseline survey that conservation areas were useful for the conservation of the fishery and protecting broodstock. This number had increased to 96% in the endline survey.

Evolution in the percentage of households considering that the CFI helps resolve conflict in fisheries

Table 40: CFI households considering that the CFI helps resolve conflict in fisheries

	“Helps”	“Does not help”	“Do not know”
Baseline	38.7%	34.5%	26.8%
Endline	67.1%	17.8%	15.1%

Among CFI households, 39% reported in the baseline survey that the CFI helps to resolve fisheries conflicts. This proportion increased to 67% in the endline survey.

Evolution in the percentage of households thinking that being a member of the CFI has helped them socially and economically

Table 41: Opinions that being a member of the CFI has helped them socially and economically

	CFI membership useful	CFI membership not useful	Do not know
Baseline	83.4%	8.1%	8.8%
Endline	99.7%	0.3%	-

At the beginning of the project, 83% of CFI households reported that CFI membership helped them socially and economically. This increased to 100% in the endline survey.

Evolution in the perception about the status of fish stocks

Table 42: CFI perception about the status of fish stocks

	Very bad	Bad	Neither good nor bad	Good	Very good	Unknown
Baseline	5.8%	42.2%	41.0%	9.6%	-	1.5%
Endline	2.4%	32.2%	41.8%	23.3%	0.3%	-

In the baseline survey, 48% of households reported that the condition of fish stocks was very bad or bad; this dropped to 36% in the endline survey. In the baseline survey, 10% of respondents reported that fish stocks were good or very good, and this increased to 24% in the endline survey. This is in contrast to the perception that fish catch has not increased reported above.

Evolution in the percentage of households who feel that the CFI has improved the fish stock in the area

Table 43: CFI households feeling that CFI management has improved fish stock in the area

	Stock improvement	No stock improvement	Do not know
Baseline	63.6%	8.4%	28.0%
Endline	90.8%	5.1%	4.1%

In the baseline survey, 64% of respondents reported that the CFI management had improved fish stocks in the area managed; while in the endline survey, this positive perception reached 91%. The percentage of respondents reporting “do not know” decreased from 28% to 4%.

Evolution of CFI households' perception about fish resource management

Table 44: Perception of CFI households about fish resource management

	Fish resource not managed	Some management initiatives	Good initiatives	Good sustainable management	Unknown
Baseline	6.9%	64.4%	26.4%	1.2%	1.2%
Endline	-	22.3%	65.8%	11.6%	0.3%

During the baseline survey, 64% of respondents reported that there were some fish resource management initiatives, 26% that there were good initiatives, and 1% reported good sustainable management. After project implementation, 66% reported that there were good initiatives, and 12% of CFI members reported good sustainable management of the resource.

Evolution in the percentage of households who feel that the CFI has improved the fish habitats

Table 45: Percentage of household feeling that the CFI has improved fish habitats

	Improved fish habitats	Fish habitats not improved	Do not know
Baseline	78.2%	6.9%	14.9%
Endline	96.6%	2.1%	1.4%

In the baseline survey, 78% of households surveyed reported that the CFI had helped improve the fish habitats; this number reached 97% in the endline survey; with a large reduction from 15% to 1% of respondents who “do not know”.

Evolution in the percentage of households who expect the fishery to maintain its current level of productivity

Table 46: Percentage of household who expect the fishery to maintain its current level of productivity

	Productivity will be maintained	Productivity will not be maintained	Do not know
Baseline	49.0%	42.9%	8.1%
Endline	83.6%	10.3%	6.2%

The percentage of CFI households that reported that fishery productivity could be maintained increased from 49% in the baseline survey to 84% in the endline survey. While those reporting that fishery productivity could not be maintained decreased from 43% to 10% over the life of the project.

3.4. Threats and recommendations

Evolution in the top threats reported (several answers possible)

Table 47: Top threats identified at the beginning and at the end of the project

	Baseline survey	Rank in baseline	Endline survey	Rank in endline
Electrofishing	50.9%	1	6.2%	8
Illegal gears	39.4%	2	20.1%	5
Population growth/Increase in fishing	18.7%	3	22.6%	3
Illegal fishing (in breeding season, in prohibited area, etc.)	17.8%	4	35.6%	1
Natural issue (water, weather change, deforestation, etc.)	9.5%	5	32.5%	2
Dam	9.2%	6	12.7%	6
Bomb fishing	5.2%	7	20.4%	4
Modern tools	4.0%	8	3.4%	9
Weak law	4.0%	9	1.2%	11
Unknown	3.5%	10	3.1%	10
Pollutants	2.0%	11	8.1%	7
Outsiders	1.7%	12	0.3%	12
Limited knowledge	0.6%	13	0.3%	13

The respondents were asked in both the baseline and endline surveys to identify the top threats to the fishery. In the baseline survey, the top percentage threats were electrofishing (51%), followed by illegal fishing gears (39%), population growth/increase in fishing (19%), and illegal fishing (18%). These responses changed significantly in the endline survey with the top percentage response being illegal fishing (37%), followed by natural issue (water, weather change, deforestation) (33%), population growth/increase in fishing (23%), bomb fishing (20%), illegal fishing gears (20%), and dam (13%). The increase in the identification of illegal fishing as a threat in the endline survey may be due to an increase in patrolling and CFI members being more aware of this threat resulting from trainings on topics such as fisheries laws. The increase in the identification of natural issues as a threat may be due to awareness raising activities provided by the project and on increased understanding of the interconnectedness of the ecosystem. It is interesting to note that while respondents reported a decrease in electrofishing and illegal fishing gears, there was a reported increase in bomb fishing. This is difficult to explain.

Evolution in the main types of conflict reported in the fishery (several answers possible)

Table 48: Top conflicts identified at the beginning and at the end of the project

	Baseline survey	Rank in baseline	Endline survey	Rank in endline
Unknown	52.3%	1	36.2%	2
Competition	16.4%	2	4.0%	4
Illegal fishing	13.8%	3	14.6%	3
No conflict	6.9%	4	37.5%	1
Outside fisherman	5.2%	5	1.9%	7
CF/Patroller with illegal fisherman	3.2%	6	2.5%	6
Between legal and illegal fisherman	2.3%	7	3.1%	5

The respondents were asked in the baseline and endline surveys to identify the top conflicts in the fishery. In the baseline, the highest-ranking response was “unknown” (52%), followed by competition (16%), illegal fishing (14%), and no conflict (7%). This ranking changed considerably in the endline survey, with the highest-ranking response being no conflict (38%), followed by “unknown” (36%), illegal fishing (15%, no significant change), and competition (4%). The increase in no conflict may be the result of more action being taken by the CFC to address conflicts and the decrease in competition may be due to more enforcement by the CFC to keep outside fishers from the CFi fishing area.

Evolution in actions recommended to improve the management of fisheries

Table 49: Top actions recommended at the beginning and at the end of the project

	Baseline survey	Rank in baseline	Endline survey	Rank in endline
Prevent illegal fishing	53.2%	1	57.3%	1
Conservation	12.1%	2	38.4%	2
Unknown	10.1%	3	1.6%	8
Patrolling law	8.9%	4	22.6%	3
Already Better	3.5%	5	1.2%	9
Report to CF/experts, etc.	2.6%	6	1.7%	7
Cooperation with NGOs, etc.	2.3%	7	5.3%	5
Provide money/things	2.1%	8	3.1%	6
Education	1.7%	9	10.8%	4

How could fishery management be improved? In both the baseline and endline surveys, the highest percentage response to recommended actions to improve management of fisheries was to prevent illegal fishing, 53% and 57%, respectively. This high percentage of response in both surveys indicates that preventing illegal fishing needs to be a continued high priority for the CFi. In the baseline survey, this was followed by conservation (12%), “unknown” (10%) and patrolling (9%). This changed significantly in the endline survey, with conservation (38%) and patrolling (23%) being the next highest percentage responses. This increase could be the result of activities undertaken by the project to establish conservation areas, awareness raising, and support for patrols. Patrolling is an important activity to prevent illegal fishing and to protect conservation areas. The response “unknown” also decreased significantly as a result of trainings and action on more management options being provided to CFi members.

Main problems identified in processing

The respondents were asked to identify the main problems in fish processing. In the baseline survey, the highest percentage responses were “unknown” (66%), no problem (17%), and limited ingredients (7%). The endline survey had different responses including no problem (36%), “unknown” (34%) and problem with technique (9%).

Recommended ways to improve processing

How could fish processing be improved? In both the baseline and endline surveys the highest percentage of responses were “unknown”, 67% and 55%, respectively. In the baseline survey, the other highest percentage responses were need for *technical* training (14%) and standardization of technology (14%). In the endline survey, the other highest percentage responses were standardization of technology (20%) and need for technical training (17%).

Main problems identified in aquaculture

Households surveyed were asked about main problems in aquaculture. In the baseline survey, 97% of respondents answered “unknown” and in the endline survey it was 89%. In the baseline survey, the next highest percentage response was limited technology (2%) and in the endline survey it was problem with fish (5%) and lack of inputs (feed, water, money) (4%). For the 10 households already doing aquaculture, the highest percentage problems in the baseline survey were limited technology (40%), problem with fish (30%), and weather (20%). In the endline survey, it was problem with fish (31%), unknown (31%), lack of inputs (24%), and limited technology (11%).

Recommended ways to improve aquaculture

How could aquaculture be improved? In both the baseline and endline surveys the highest percentage response, 97% and 88%, respectively, was unknown. The next highest percentage response in both surveys was technical training, 2% in the baseline survey and 6% in the endline survey. For the 10 households already doing aquaculture, technical training was the highest percentage response in the baseline survey (50%) and endline survey (42%). This was followed by the response of standardization of production system in the baseline survey (20%) and 31% in the endline survey.

Recommended ways to improve the active participation of women in the CFI

When asked how to improve the active participation of women in the CFI, the highest percentage responses in the baseline survey were encouragement/support, education/training, and meeting/participation/workshop. These three responses were the same in the endline survey although the order changed to meeting/participation/workshop, encouragement/support, and education/training.

In villages with ethnic communities, recommended ways to improve the participation of indigenous people

Respondents were asked how to improve the participation of indigenous people in the CFI. “Unknown” was the highest percentage response in both surveys, however, in the baseline it was 29%, while in the endline it increased to 61%. Education/training and support/encouragement were the next highest percentage responses in both the baseline and endline surveys.

4. CONCLUSIONS AND RECOMMENDATIONS

A baseline survey was conducted in late 2017 and an endline survey was conducted in early 2021. The present document is focused on project intervention benefits. The main objective of the questions asked during the baseline and the endline surveys is to compare for each CFI assisted by the project the situation at the beginning and at the end of the project.

Overall, the respondents in the endline survey felt that the project was beneficial to them. This was reflected in overall improvements in the CFI and CFC operation and administration, and in governance and resource management. The respondents also reported overall social and economic benefits from CFI membership.

A relatively small percentage of CFI household members (21%) consider themselves to be full-time fishers. A relatively small percentage of CFI household members (16%) consider themselves to be part-time fishers. All CFI households report that the main sources of household income come from a mix of fishing and agriculture practices (crops, orchards, livestock), although CFI households report slightly more income from agriculture practices than fishing. The respondents reported an increase in doing aquaculture and in processing fish. The increase in fish processing may be due to COVID and restricted access to markets.

The CFI households report that less of their protein comes from fish than in the baseline. However, the fear that there is not enough fish to meet their family needs during all seasons of the year has decreased. The respondents reported a decrease in their perception that their household worry that in the past four weeks they would not have enough food or have to cut on portions. This may be due to an increase in the household's diversification of food sources.

The respondents were very positive about CFI governance. There was a reported increase over the baseline survey in the number of meetings per year, coordination with the commune council and Fisheries Cantonment, networking with other CFI and organizations, engagement in fund raising, active and successful fund raising, diversification of funding sources (especially from NGOs), and transparency of financial records. The respondents were also well satisfied with CFI management, reporting an increase in participation in CFI activities, well managed finances, elections open to everyone, and transparent decision-making over the baseline.

The CFI households reported a significant decrease in illegal fishing over the life of the project (87% of respondents report such decrease). Almost all CFI households also report that the government (97%) and the CFC (99%) are taking action to address illegal fishing. Ninety-seven percent (97%) of respondents felt that there was good enforcement. This could be attributed to increased patrols due to the provision of boats and equipment for patrolling, training, and funds to conduct patrols. However, bomb fishing and illegal fishing in the breeding season and in prohibited areas continues to be a problem. In addition, while illegal fishing has been reduced and enforcement improved, respondents felt that the CFI was less able to punish offenders, either formally or informally, at the end of the project.

One hundred percent (100%) of CFI households report that the CFI benefits them both socially and economically by increasing fish catch, providing alternative livelihoods, and opening up more markets for their fish catch. Among CFI households, there was a reduction in the percentage of respondents reporting that fish catch had decreased in the last five years. However, this result did not translate into a perception of respondents feeling that the catch had increased, with a slight reported decrease during endline survey. During the baseline survey, 42% of households consulted described the condition of fish stocks as bad; this figure had dropped to 32% in the endline survey. Similarly, 10% of respondents estimated that fish stocks were good at the beginning of the project, and they were 23% at the end. Respondents felt that conservation areas are good and that fisheries conflicts have been reduced. Ninety-one percent (91%) report that the CFI has improved the fish stock. Seventy-six percent (76%) reported that the CFI has good and sustainable fisheries management. Ninety-seven percent (97%) feel that the CFI has improved fish habitats. Among CFI households, 84% expect that the fishery will maintain its current level of productivity over the next five years.

The main threats to the fishery in the endline survey include illegal fishing gears and practices, natural issues such as climate change, and population growth/more fishers. The suggested approaches to improve fisheries management include prevent illegal fishing, more conservation areas, and more patrolling and enforcement. The respondents stated that conflicts have been significantly reduced, and what conflicts there are include illegal fishing and competition. There is a need for assistance for better methods for processing fish and more technical training on aquaculture.

In all cases, there was a reported improvement in CFI governance with increases in CFI having by-laws and internal regulations; identified boundaries and map of the community fishing area; a community fishing area agreement; the CFI is registered and recognized by MAFF; a community fishing area management plan; rules and regulations against illegal fishing; and having a conservation area.

There has reportedly been a slight increase in women members of the CFI and CFC. However, these numbers may not be reliable as other project reports indicate a much higher percentage of women participating in the CFI and CFC. There has been effective training conducted and exposure that has improved respondents understanding of gender. There is a high positive perception about the active participation of women in the CFI. The CFI households reported that participation of women needs to more supported and encouraged, there needs to more education and training on gender, and more meetings and workshops to encourage participation. The CFI households reported that participation of indigenous people needs to be supported and encouraged through more education and training on indigenous people for more understanding and more meetings and workshops to encourage participation.

There was an increase in respondents getting information from extension agents over the life of the project to 85%. Ninety-seven percent (97%) of respondents reported that the local administration was helpful for assistance and conflict management.

The following points are **key recommendations** to maintain and enhance the project outputs and benefits:

1. Ensure that each CFi has a financial sustainability plan to achieve long-term CFi viability and sustainability;
2. Enhance capacity; through, for example, technical training; to continue to diversify livelihoods of all CFi households as fishing is a livelihood and income source for a decreasing percentage of the households and all households rely on a mix of livelihood and income sources, such as agriculture, fish processing and aquaculture;
3. Utilize the Stung Treng fish hatchery to enhance aquaculture as a household livelihood option through provision of production inputs and technical assistance;
4. Strengthen CFi and CFC capacity to manage the fisheries and to serve its member's needs, through training and technical assistance, on administration (i.e. funding, roles and responsibilities), fisheries and ecosystem management, conflict management, and compliance and enforcement;
5. Illegal fishing is the most important fisheries issue. Continue capacity building and put resources into enforcement and compliance activities such as patrolling;
6. Improve capacity to punish offenders of fishing laws and regulations through both formal and informal methods;
7. Enhance the participation of women and indigenous people in all CFi activities and as members of the CFC through encouragement and support and education and training;
8. Improve coordination and cooperation among government, non-governmental organizations and donors on support and activities to CFis and CFCs.

5. ANNEX: SURVEY QUESTIONNAIRE

Mekong Integrated Water Resources Management Project (Phase III)

Component 1

Community Fisheries Survey in Kratie and Stung Treng Provinces

គម្រោង គ្រប់គ្រងធនធានទឹកចំរុះ ទន្លេមេគង្គ (តំណាក់កាលទី III), ផ្នែកទី 1

ការស្ទង់មតិសហគមន៍នេសាទ

ខេត្តក្រចេះ និងខេត្តស្ទឹងត្រែង

This Fisheries Administration is undertaking a five-year project to improve the management of fisheries resources in Stung Treng and Kratie Provinces. We want to understand the socioeconomic characteristics and livelihoods of village members in the project area, and their perceptions about the status and trends of their fisheries, and community fisheries management. The findings of this survey will provide a baseline to inform project activities, monitor project progress, and evaluate project impact.

To improve this understanding, we need your help to complete a questionnaire. All households selected for this survey were randomly selected, and all responses will remain confidential. You are able to withdraw at any point during interview. You are able to withdraw at any point during interview. If you choose to withdraw, your information will not be used. Your assistance is greatly appreciated.

រដ្ឋបាលជលផលកំពុងអនុវត្តគម្រោងរយៈពេល 5 ឆ្នាំដើម្បីកែលំអរ ការគ្រប់គ្រងធនធានជលផលនៅខេត្តស្ទឹងត្រែង និងក្រចេះ។ យើងចង់យល់ពីលក្ខណៈ សេដ្ឋកិច្ច សង្គម និងជីវភាពរស់នៅរបស់ប្រជាជននៅភូមិក្នុងតំបន់គោលដៅនៃគម្រោង និងការយល់ឃើញរបស់ពួកគេអំពីស្ថានភាព និងនិន្នាការ នៃការនេសាទត្រី និងការគ្រប់គ្រង សហគមន៍នេសាទ។ ការរកឃើញនៃការស្ទង់មតិនេះនឹងផ្តល់នូវមូលដ្ឋានមួយដើម្បីផ្តល់ព័ត៌មានដល់សកម្មភាពគម្រោងតាមដានវឌ្ឍនៈភាពគម្រោង និងវាយតម្លៃ ផលប៉ះពាល់របស់គម្រោង។

ដើម្បីបង្កើនការយល់ដឹងនេះយើងត្រូវការជំនួយរបស់អ្នកដើម្បីបំពេញកម្រងបញ្ជីសំណួរនេះ។ គ្រួសារទាំងអស់ដែលត្រូវបានជ្រើសរើសសម្រាប់ការស្ទង់មតិនេះ ត្រូវបាន ជ្រើសរើសដោយចៃដន្យហើយចម្លើយទាំងអស់នឹងរក្សាជាការសម្ងាត់។ អ្នកអាចដកចេញនៅចំណុចណាមួយក្នុងអំឡុងពេលសំភាសន៍។ ប្រសិនបើអ្នកជ្រើសដើម្បីដក ទិន្នន័យរបស់អ្នកនឹងមិនត្រូវបានប្រើ។ ជំនួយរបស់អ្នកត្រូវ បានកោតសរសើរយ៉ាងខ្លាំង។

Do you have any questions about the survey? Do we have your agreement to proceed?

តើអ្នកមានសំណួរអ្វីផ្សេងទៀតទេ អំពីការស្ទង់មតិនេះ? តើអ្នកអនុញ្ញាតឱ្យដំណើរការបានទេ

Participant understands role and has given verbal consent (please check)

អ្នកចូលរួមយល់ពីតួនាទី និងបានផ្តល់ការព្រមព្រៀងដោយផ្ទាល់ (សូមពិនិត្យមើល)

☐

During the interview, convert all currency units into US dollars (USD 1 = KHR 4000)

ក្នុងកំឡុងពេលសំភាសន៍ ប្តូរឯកតារូបិយប័ណ្ណទាំងអស់ជាដុល្លារអាមេរិក (USD 1 = 4000 រៀល)

Part ផ្នែកទី I

Questionnaire for Household Survey

កម្រងសំណួរសម្រាប់ការស្ទង់មតិតាមគ្រួសារ

1. Identification ការកំណត់អត្តសញ្ញាណ

1.1	Date of Interview ថ្ងៃធ្វើសម្ភាសន៍	
1.2	Household Identification Number in the village chief books លេខអត្ត សញ្ញាណគ្រួសារនៅក្នុងសៀវភៅមេ ភូមិ	
1.3	Village Name ឈ្មោះភូមិ	
1.4	Commune Name ឈ្មោះឃុំ	
1.5	District Name ឈ្មោះស្រុក	
1.6	Province ខេត្ត	
1.7	Name and Telephone number of Interviewee លេខទូរស័ព្ទ និងឈ្មោះ របស់ អ្នកផ្តល់សម្ភាសន៍	
1.8	Questionnaire number on this date លេខរៀងនៃកម្រងសំណួរក្នុងកាលបរិច្ឆេទ នេះ	

2. History ប្រវត្តិ

2.1	How long has your family been living in this village? តើគ្រួសាររបស់អ្នកបានរស់នៅក្នុងភូមិ នេះអស់រយៈពេលប៉ុន្មានហើយ ? Years ឆ្នាំ_____
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3. Household composition សមាសភាពគ្រួសារ

3.1	How many people are part of your household? (those living in and those living outside but who send money to or receive money from home) តើសមាជិកក្នុងគ្រួសាររបស់អ្នកមានប៉ុន្មាននាក់ ? (គិតទាំងអ្នក ដែលរស់នៅក្នុង និងក្រៅគ្រួសារ រួមទាំងអ្នកដែលផ្ញើប្រាក់ឬ ទទួលប្រាក់ពីផ្ទះ)	Number of people ចំនួនមនុស្ស.....
3.2	How many male among the household people? តើមាន ប្រុសប៉ុន្មាននាក់នៅក្នុងគ្រួសារ ?	Number of male ចំនួនមនុស្សប្រុស _____

3.3	Gender of the household head តើនិណាជាមេគ្រួសារ?	1. Male ប្រុស () 2. Female ស្រី ()
3.4	Ethnicity ជនជាតិភាគតិច	Phnong ផ្នង____ Kouy កួយ____ Steing ស្ទៀង____ Mil មីល____ Kroal ក្រោល____ Thmorn ថ្មិន____ Khaonh ខ្នុញ____ Tompuonn ទំពួន____ Charay ចារាយ____ Kroeung គ្រីង____ Kavet កាវេត____ Saouch ស្ទូច____ Lun លុន____ Kachak កក្ខាក់____ Praov ព្រៅ____ Khmer ខ្មែរ____ Cham ចាម____ Vietnamese វៀតណាម____ Lao ឡាវ____ Other ផ្សេងៗ_____
3.5	Language spoken and understood ភាសានិយាយនិងយល់	Mil មីល____ Kroal ក្រោល____ Thmorn ថ្មិន____ Khaonh ខ្នុញ____ Tompuonn ទំពួន____ Charay ចារាយ____ Kroeung គ្រីង____ Kavet កាវេត____ Saouch ស្ទូច____ Lun លុន____ Kachak កក្ខាក់____ Praov ព្រៅ____ Khmer ខ្មែរ____ Cham ចាម____ Vietnamese វៀតណាម____ Lao ឡាវ____ Other ផ្សេងៗ_____

4. Livelihood របរចិញ្ចឹមជីវិត

4.1	<p>What is the percentage of household income that comes from each activity in a year? តើភាគរយ នៃ ចំណូល ប្រចាំគ្រួសារ ដែលបានមកពីសកម្មភាពនីមួយៗនាពេលបច្ចុប្បន្ននេះប៉ុន្មាន ?</p> <p>Crop ដំណាំ: _____%</p> <p>Livestock សត្វចិញ្ចឹម: _____%</p> <p>Orchard ចំការ: _____%</p> <p>Fishing ការនេសាទ: _____%</p> <p>Aquaculture វារីប្បកម្ម: _____%</p> <p>Gathering ការប្រមូលផលវារីជាតិ: _____%</p> <p>Fishing related jobs (processing, trading, boat/gear building) ការងារពាក់ព័ន្ធនឹងនេសាទ (ការកែច្នៃ, ការលក់ដូរ, ទូក / ធ្វើឧបករណ៍នេសាទ): _____%</p> <p>Non-Fish-Farm Jobs (Specify) ការងារក្រៅពីកសិដ្ឋានចិញ្ចឹមត្រី (បញ្ជាក់): _____%</p> <p>Non-Fish-Farm Jobs (Specify) ការងារក្រៅពីកសិដ្ឋានចិញ្ចឹមត្រី (បញ្ជាក់): _____%</p> <p>Non-Fish-Farm Jobs (Specify) ការងារក្រៅពីកសិដ្ឋានចិញ្ចឹមត្រី (បញ្ជាក់): _____%</p> <p>Non-Fish-Farm Jobs (Specify) ការងារក្រៅពីកសិដ្ឋានចិញ្ចឹមត្រី (បញ្ជាក់) _____%</p> <p>Remittance (Specify) ការផ្ញើប្រាក់ (បញ្ជាក់) _____%</p> <p>Other (Specify) ផ្សេងៗ (បញ្ជាក់): _____%</p>

5. House and land assets ទ្រព្យសម្បត្តិផ្ទះ និងដី

5.1	<p>What is the construction material of the house? ប្រភេទនៃផ្ទះ? _____</p> <p>(1 = thatch house ផ្ទះស្បូវ, 2 = wooden house roofed with tin sheets ផ្ទះដំបូលប្រក់ក្បឿង, 3 = Wooden house roofed with tiles and fibrous cement ផ្ទះដំបូលប្រក់ក្បឿងនិងស៊ីម៉ង់ត៍, 4 = concrete/brick house ផ្ទះបេតុង / ឥដ្ឋ, 5 = others (specify): ផ្សេងៗ (បញ្ជាក់).....</p>
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Part ផ្នែកទី II

FISHING, AQUACULTURE AND NUTRITION QUESTIONNAIRE

ការនេសាទ, វារីប្បកម្ម និងសំណួរអាហារ រូបត្ថម្ភ

1. FISHING ការនេសាទ

9.1	How many years have you been fishing? តើអ្នកបានធ្វើការនេសាទប៉ុន្មានឆ្នាំមកហើយ? _____ years ឆ្នាំ	
9.2	How many members of your household are engaged in fishing FULL TIME? តើសមាជិកក្នុងគ្រួសារប៉ុន្មាននាក់ដែលបានធ្វើការនេសាទជាប្រចាំ? _____	
9.3	How many members of your household are engaged in fishing PART TIME? តើសមាជិកក្នុងគ្រួសារប៉ុន្មាននាក់ដែលបានធ្វើការនេសាទម្តងម្កាល? _____	
	Do you own any fishing equipment with a value > US\$1000 តើអ្នកមានឧបករណ៍នេសាទ ផ្ទាល់ខ្លួន តម្លៃធំជាង 1000 ដុល្លា	Number ចំនួន
9.4		Resale Value តម្លៃលក់បន្ត
9.5		
9.6		
9.7	What other products do you catch/collect besides fish? តើអ្នកប្រមូលផលអ្វីខ្លះក្រៅពីត្រី? Snailsឱ្យង __Turtles អណ្តើក__ Crabs ក្តាម__ Snakes ពស់__Other ផ្សេងៗ (specify) បញ្ជាក់__	
9.8	During the last five year has your fish catch: តើការចាប់ត្រីរបស់អ្នកក្នុងរយៈពេល ៥ឆ្នាំចុងក្រោយ៖ Increased in quantity by មានចំនួនកើនឡើងគិតជា _____ % Remained the same មានចំនួនដូចពីមុន _____ Decreased in quantity by មានចំនួនថយចុះគិតជា _____ %	
9.9	What is the reason? តើមានហេតុផលអ្វីខ្លះ?	
9.10	If fish catch has decreased, how did you cope with the decline in your catch? (Note: answer choices focus on the livelihood decision to cope with change). ប្រសិនបើការនេសាទត្រីថយចុះតើអ្នកបានមាន វិធានការទប់ទល់នឹងការធ្លាក់ចុះនៃការចាប់ត្រីរបស់អ្នកដែរឬទេ? (ចំណាំ: ជម្រើស ចម្លើយ ផ្ដោតលើការ សម្រេចចិត្តនៃការជីវិតដើម្បីទប់ទល់នឹងការផ្លាស់ប្តូរ) ។ <ol style="list-style-type: none"> 1. Increase farming activities បង្កើនសកម្មភាពកសិកម្ម 2. Started to farming on rented farm ចាប់ផ្តើមធ្វើកសិកម្មលើកសិដ្ឋានជួល 3. Started upland cultivation ចាប់ផ្តើមដាំដុះលើដីទួល 4. Bought farmland ទិញដីស្រែចំការ 5. Economic migration of some members (in country or abroad) ការធ្វើចំណាកស្រុក ដោយសារ សេដ្ឋកិច្ច នៃសមាជិកមួយចំនួន (នៅក្នុងប្រទេស ឬក្រៅប្រទេស) 	

	6. Borrowed money បានខ្ចីលុយ 7. Reduced food consumption កាត់បន្ថយការប្រើប្រាស់អាហារ 8. Other (Please specify) ផ្សេងទៀត (សូមបញ្ជាក់អោយច្បាស់) _____
9.11	What percentage of your household INCOME do you think comes from fish and fishing? តើអ្នកគិតថាចំណូលនៃគ្រួសាររបស់អ្នកប៉ុន្មានភាគរយពីត្រី និងការនេសាទ? _____%
9.12	What percentage of the meat (protein) eaten in your household do you think comes from fish? តើប៉ុន្មានភាគរយ នៃសាច់ (ប្រូតេអ៊ីន) ដែលហូបនៅក្នុងគ្រួសាររបស់អ្នក, អ្នកគិតថាបានមកពីត្រី? _____%

Fishing Income ចំណូលពីការនេសាទ	Dry season (Feb-Apr) រដូវក្ដៅខែ (កុម្ភៈ-មេសា)	Flooding (May-July) រដូវទឹកជំនន់ ខែ (ឧសភា-កក្កដា)	Flood/rainy season (Aug.-Oct.) រដូវវស្សានិងទឹកជំនន់ខែ (សីហា-តុលា)	Flood recession (Nov.- January) រដូវទឹកជំនន់ស្រក ខែ (វិច្ឆិកា-មករា)
9.13 Average monthly income from fishing ចំណូលប្រចាំខែជាមធ្យម ពីការនេសាទ				
9.14 Average monthly income from fish trading (retail, wholesale) ចំណូល ប្រចាំខែ ជាមធ្យមពីការ លក់ដូរត្រី (លក់រាយ, លក់ដុំ)				
9.15 Average monthly income from fish processing ប្រាក់ចំណូល ប្រចាំខែពីការកែច្នៃត្រី				

Do not include the catch of waged labor in fisheries for other people.

កុំរាប់បញ្ចូលការចាប់យកពលកម្មដែលបានរៀបចំឡើងក្នុងវិស័យផលិតផលសំរាប់អ្នកដទៃ។

9.16	In your opinion, what are the main threats to the fisheries? តាមគំនិតរបស់អ្នក, តើអ្វីជាការគំរាមកំហែងចម្បងដល់វិស័យផលិតផល ?
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Most important fishing gears ឧបករណ៍នេសាទដែលសំខាន់ជាងគេ

9.17 What is the most important of your fishing gear (Number 1)?
តើឧបករណ៍នេសាទណាមួយដែលសំខាន់ជាងគេដែលចាប់ត្រីបានច្រើន (ទី ១) ? Name: ឈ្មោះ:.....

Examples: “Gillnet”; “Castnet”, “Traps”; “Hook longline/Single” (ឧទាហរណ៍: មង, សំណាញ់, លប, សន្ទូចរនង/បង្កៃ) ផ្សេងៗទៀត.....

Questions សំណួរ	Dry season (Feb-Apr) រដូវក្ដៅ ខែ កុម្ភៈ-មេសា	Flooding (May-July) រដូវទឹកជំនន់ ខែ ឧសភា-កក្កដា	Flood/rainy season (Aug.-Oct.) រដូវវស្សា ខែ សីហា-តុលា	Flood recession (Nov.-January) រដូវទឹកសម្រក វិច្ឆិកា-មករា
9.18 During what seasons do you use this gear? (yes=1, no=0) តើក្នុងរដូវណាដែលអ្នកប្រើឧបករណ៍នេះ? (បាទ = 1 គ្មាន = 0)				
9.19 How many days per month do you use this gear? តើអ្នកប្រើឧបករណ៍នេះប៉ុន្មានថ្ងៃក្នុងមួយខែ?				
9.20 What is the total weight (kg) of your catch <u>per week</u> ? Include fishing activity of all household members តើអ្នកចាប់ បាន ប៉ុន្មាន គីឡូក្រាម ក្នុងមួយសប្តាហ៍? រាប់បញ្ចូលសកម្មភាព នេសាទ របស់សមាជិកគ្រួសារទាំងអស់។				
9.21 How many kilos of catch are eaten (own use) <u>per week</u> ? តើប៉ុន្មានគីឡូក្រាម សម្រាប់ហូប (ការប្រើផ្ទាល់) នៃការ ចាប់បានក្នុង១សប្តាហ៍?				
9.22 How many kilos of catch are sold <u>per week</u> ? តើប៉ុន្មានគីឡូក្រាម សម្រាប់លក់ នៃ ការចាប់បាន ក្នុង១សប្តាហ៍?				
9.23 What is the total sale value of fish catch (USD) <u>per week</u> ? តើការលក់ត្រី សរុបគិតជា ដុល្លារ ក្នុង ១សប្តាហ៍? (ដុល្លារអាមេរិក)				

*Use only Kilograms; if Tons, convert by x 1000 kg គិតជា (គ.ក), ប្រសិនបើជាតោន ត្រូវគុណ X

១០០០គ.ក

9.24 What is the most important of your fishing gear (Number 2)?

តើឧបករណ៍នេសាទណាមួយដែលសំខាន់ជាងគេដែលចាប់ត្រីបានច្រើន (ទី ២) ? **Name:** ឈ្មោះ:.....

(Examples: gillnets “*mong kang*”; fishing rod “*santouch bobok*”; cylinder trap “*lop nhek sre*”; handle scoop basket “*chhnieng dai*”; scissor push net “*thnorng runh*”) ឧបករណ៍នេសាទត្រីតូចៗ (ទៀងទាត់)

សំខាន់ពីរ (ឧទាហរណ៍: មងកាំង, បបក់, លប, ឈ្មាង និងថ្នងរុញ), ផ្សេងៗទៀត

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Questions សំណួរ	Dry season (Feb-Apr) រដូវក្ដៅ ខែកុម្ភៈ-មេសា	Flooding (May-July) រដូវទឹកជំនន់ ឧសភា-កក្កដា	Flood/rainy season (Aug.-Oct.) រដូវវស្សា ខែ សីហា-តុលា	Flood recession (Nov.-January) រដូវទឹកសម្រក វិច្ឆិកា-មករា
9.25 During what seasons do you use this gear? (yes=1, no=0) តើក្នុងរដូវណាដែលអ្នកប្រើឧបករណ៍នេះ? (បាទ = 1 គ្មានលេខ 0)				
9.26 What is the total weight (kg) of your catch <u>per week</u> ? <i>Include fishing activity of all household members.</i> តើអ្នកចាប់ បាន ប៉ុន្មាន គ.ក ក្នុងមួយសប្តាហ៍? រាប់បញ្ចូលសកម្មភាព នេសាទរបស់សមាជិកគ្រួសារទាំងអស់។				
9.27 How many kilos of catch are eaten (own use) <u>per week</u> ? តើប៉ុន្មានគីឡូក្រាមសម្រាប់ហូប (ការប្រើផ្ទាល់) ក្នុង១សប្តាហ៍ នៃការចាប់បាន?				
9.28 How many kilos of catch are sold <u>per week</u> ? តើប៉ុន្មានគីឡូក្រាម សម្រាប់លក់/១សប្តាហ៍នៃការចាប់បាន?				
9.29 What is the total sale value of fish catch <u>per week</u> ? (USD) តើការលក់ត្រីសរុប/១សប្តាហ៍តម្លៃប៉ុន្មាន/១សប្តាហ៍(ដុល្លារអាមេរិក)				

*Use only Kilograms; if Tons, convert by x 1000 kg គិតជា (គ.ក), ប្រសិនបើជាតោន ត្រូវគុណ ១០០០គ

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9.30 What is the most important of your fishing gear (Number 3)?

តើឧបករណ៍នេសាទណាមួយដែលសំខាន់ជាងគេដែលចាប់ត្រីបានច្រើន (ទី ៣) ? **Name:** ឈ្មោះ:.....

Questions សំណួរ	Dry season (Feb-Apr) រដូវក្ដៅ ខែកុម្ភៈ- មេសា	Flooding (May-July) រដូវទឹកជំនន់ ខែ ឧសភា-កក្កដា	Flood/rainy season Aug.-Oct. រដូវវស្សា ខែ សីហា-តុលា	Flood recession (Nov.-January) រដូវទឹកសម្រក វិច្ឆិកា-មករា
9.31 During what seasons do you use this gear? (1=yes, 0=no) តើក្នុងរដូវណាដែលអ្នកប្រើឧបករណ៍នេះ ? (បាទ = 1 គ្មានលេខ 0)				
9.32 What is the total weight (kg) of your catch <u>per week</u> ? Include fishing activity of all household members. តើអ្នកចាប់បានប៉ុន្មាន គ.ក ក្នុងមួយថ្ងៃ ? រាប់បញ្ចូលសកម្មភាពនេសាទ របស់សមាជិកគ្រួសារទាំងអស់។				
9.33 How many kilos of catch are eaten (own use) <u>per week</u> ? តើប៉ុន្មានគីឡូក្រាមសម្រាប់ហូប (ការប្រើផ្ទាល់) សម្រាប់១សប្តាហ៍ នៃការចាប់បាន ?				
9.34 How many kilos of catch are sold <u>per week</u> ? តើប៉ុន្មានគីឡូក្រាមសម្រាប់លក់/១សប្តាហ៍នៃការចាប់បាន ?				
9.35 What is the total sale value of fish catch <u>per week</u> ? (USD) តើការលក់ត្រីសរុបក្នុងមួយសប្តាហ៍តម្លៃប៉ុន្មាន ក្នុង ១សប្តាហ៍ ? (ដុល្លារ)				

*Use only Kilograms; if Tons, convert by x 1000 kg គិតជា (គ.ក), ប្រសិនបើជាតោន ត្រូវគុណ ១០០០គ.ក

9.36 By whom is fishing done? តើភាគច្រើនអ្នកណាទៅនេសាទត្រី ? by women ដោយស្ត្រី _____%; men ដោយបុរស _____%; ដោយកូនក្មេង by children _____% (sum should be ផលបូកត្រូវបាន 100%).....%

10. PROCESSING ការកែច្នៃ

10.1 Do you process fish? តើអ្នកមានកែច្នៃត្រី YES ធ្វើ _____ NO អត់ _____

10.2 If yes, by whom is processing done? (sum should be 100%)

ប្រសិនបើមាន, តើការកែច្នៃត្រីត្រូវបានធ្វើដោយនរណា ? (ផលបូកត្រូវគិតជា 100%)

Men បុរស	Percentage: ជាភាគរយ _____ %
Women ស្រី	Percentage: ជាភាគរយ _____ %
Children ក្មេង	Percentage: ជាភាគរយ _____ %
Total សរុប	Percentage: ជាភាគរយ _____ %

Questions	Dry season (Feb-Apr) រដូវក្ដៅ ខែកុម្ភៈ- មេសា	Flooding (May-July) រដូវទឹកជំនន់ ខែ ឧសភា-កក្កដា	Flood/rainy season (Aug.-Oct.) រដូវវស្សា ខែ សីហា-តុលា	Flood recession (Nov.-January) រដូវទឹកសម្រក វិច្ឆិកា-មករា
10.3 During what seasons do you process fish? (1=yes, 0= no) តើក្នុងរដូវណាដែលអ្នកធ្វើការកែច្នៃ ត្រី នេះ? (បាទ = 1 គ្មានលេខ 0)				
10.4 How many kg do you process <u>per week</u> ? Include activity of all household members. តើប៉ុន្មាន គ.ក ដែលអ្នកធ្វើ ការ កែច្នៃក្នុង ១សប្តាហ៍? រួមបញ្ចូល សកម្មភាព សមាជិកគ្រួសារទាំងអស់				
10.5 How many kilos of processed fish do you eat <u>per week</u> (own use)? តើត្រីកែច្នៃប៉ុន្មាន គីឡូក្រាម សម្រាប់ហូប (ការប្រើ ផ្ទាល់) ក្នុង១សប្តាហ៍?				
10.6 How many kilos of processed fish do you sell <u>per week</u> ? តើត្រីកែច្នៃប៉ុន្មានគីឡូក្រាម សម្រាប់ លក់ក្នុង ១សប្តាហ៍?				
10.7 What is the total sale value of fish processed and sold <u>per week</u> ? (USD) តើការលក់ត្រីបានកែច្នៃសរុបក្នុងមួយ សប្តាហ៍ ប៉ុន្មាន ក្នុង ១សប្តាហ៍? (ដុល្លារអាមេរិក)				

*Use only Kilograms; if Tons, convert by x 1000 kg គិតជា (គ.ក), ប្រសិនបើជាតោន ត្រូវគុណ ១០០០

គ.ក

10.8	In your opinion, what are the main problems in processing? ក្នុងគំនិតរបស់អ្នក, តើអ្វីទៅជាបញ្ហាចម្បងក្នុងការកែច្នៃត្រី?
10.9	In your opinion, how can processing be improved? តើនៅក្នុងគំនិតរបស់អ្នក, តើធ្វើបែបណាដើម្បីធ្វើឲ្យប្រសើរឡើងក្នុងការកែច្នៃត្រី?

11. AQUACULTURE វារីប្បកម្ម

11.1	Do you practice aquaculture តើអ្នកធ្វើវារីប្បកម្មទេ? YES ធ្វើ _____ NO អត់ _____
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11.2 If yes, by whom is processing done? (sum should be 100%)
ប្រសិនបើមាន, តើការកែច្នៃត្រីអ្នកណាជាធ្វើ? (ផលបូកត្រូវគិតជា 100%)

Men បុរស	Percentage: ជាភាគរយ _____%
Women ស្រី	Percentage: ជាភាគរយ _____%
Children ក្មេង	Percentage: ជាភាគរយ _____%
Total សរុប	Percentage: ជាភាគរយ _____%

11.3	What species are you raising តើប្រភេទអ្វីខ្លះអ្នកចិញ្ចឹម?
11.4	What is the percentage of your fingerlings coming from the wild? តើកូនត្រីរបស់អ្នកយកមកពីធម្មជាតិមានប៉ុន្មានភាគរយ? _____%
11.5	What is the percentage of your fingerlings coming from a hatchery? តើកូនត្រីរបស់អ្នកយកមកពីការភ្ជួរមានប៉ុន្មានភាគរយ? _____%
11.6	Do you feed your aquaculture fish with fish from the wild? តើអ្នកចិញ្ចឹមត្រីដោយឲ្យចំណី ដែលរកបានពីធម្មជាតិដែលឬទេ? Yes _____ No _____
11.7	If yes, what is the percentage of wild fish in the protein they eat? ប្រសិនបើមាន, តើត្រីពីធម្មជាតិមានប៉ុន្មានភាគរយ ឲ្យវាស៊ី? _____%

Questions សំណួរ	Dry season (Feb-Apr) រដូវក្ដៅ ខែកុម្ភៈ កៈ-មេសា	Flooding (May-July) រដូវទឹកជំនន់ ខែ ឧសភា-កក្កដា	Flood/rainy season (Aug.-Oct.) រដូវវស្សា ខែ សីហា-តុលា	Flood recession (Nov.-January) រដូវទឹកសម្រក វិច្ឆិកា-មករា
11.8 For each of the past seasons, how many kilos of aquaculture fish did your produce? សម្រាប់រដូវកាលនីមួយៗកន្លងមក តើការចិញ្ចឹម ត្រី បានប៉ុន្មានគីឡូក្រាម ?				
11.9 How many kilos of the production are consumed by the household? តើចំនួនប៉ុន្មាន Kg នៃផលិតកម្ម ត្រូវបានប្រើប្រាស់ដោយគ្រួសារ ?				
11.10 How many kilos of the production are sold? តើចំនួន Kg នៃការផលិតកម្មត្រូវបានលក់ ?				
11.11 What is the total sale value of aquaculture fish production for this system per season? (USD) តើអ្នកលក់ត្រីចិញ្ចឹមបានប៉ុន្មាន ក្នុងមួយរដូវ? (ដុល្លារ)				
11.12	In your opinion, what are the main problems in aquaculture? តើនៅក្នុងគំនិតរបស់អ្នក, តើអ្វីទៅជាបញ្ហាចម្បងក្នុង ការធ្វើវារីវប្បកម្ម ?			
11.13	In your opinion, how can aquaculture be improved? តើនៅក្នុងគំនិតរបស់អ្នក, តើធ្វើបែបណាដើម្បីធ្វើឲ្យប្រសើរ ឡើងក្នុងការការធ្វើវារីវប្បកម្ម ?			

11. FOOD AND NUTRITION អាហារនិងអាហារូបត្ថម្ភ

Focus on the whole year ផ្ដោតលើរយៈពេល ពេញមួយឆ្នាំ

Is there a season during which there is not enough food to meet the family needs? តើមានរដូវកាលដែល មិនមានអាហារគ្រប់គ្រាន់ដើម្បីបំពេញតាមតម្រូវការរបស់គ្រួសារទេ ?

Focus on the whole year ផ្ដោត លើរយៈពេល ពេញមួយឆ្នាំ	Dry season (Feb-Apr) រដូវក្ដៅ ខែ កុម្ភៈ-មេសា	Flooding (May-July) រដូវទឹកជំនន់ ខែ ឧសភា-កក្កដា	Flood/rainy season (Aug.-Oct.) រដូវវស្សា ខែ សីហា-តុលា	Flood recession (Nov.-January) រដូវទឹកសម្រក វិច្ឆិកា-មករា
12.1 Not enough rice អង្ករមិន គ្រប់គ្រាន់				
12.2 Not enough vegetable បន្លែ មិនគ្រប់គ្រាន់				
12.3 Not enough fish ត្រីមិនគ្រប់ គ្រាន់				
12.4 Not enough meat សាច់មិន គ្រប់គ្រាន់				

Focus on the past month (4 weeks) ផ្ដោតលើខែកន្លងទៅ (4 សប្តាហ៍)

	Never មិន ដែល	Sometimes (1-10 times) ពេលខ្លះ (1- 10 ដង)	Often (>10 times) ជាញឹក ញាប់ (> 10 ដង)	Daily ប្រចាំ ថ្ងៃ
12.5 In the past four weeks = 30 days, did you worry that your household would not have enough food or have to cut on portions / quality? ក្នុងរយៈពេលបួនសប្តាហ៍ = 30 ថ្ងៃតើ អ្នកព្រួយបារម្ភថាគ្រួសាររបស់អ្នកមិនមានអាហារគ្រប់គ្រាន់ឬត្រូវកាត់បន្ថយ 1ផ្នែក/ គុណភាព ?				
12.6 In the past four weeks, did you or any household member increase fishing, especially to get more food for the household? ក្នុងរយៈពេលបួនសប្តាហ៍ចុងក្រោយនេះតើអ្នក ឬសមាជិក គ្រួសារណាម្នាក់បង្កើនការនេសាទជាពិសេសដើម្បីទទួលបានអាហារច្រើនជាងសម្រាប់គ្រួសារ?				

12.7 In the past four weeks, did you or any household member increase gathering of snails, crabs, shell-fish, morning glory, water lilies, or wild lotus, especially to get more food for the household? ក្នុងរយៈពេលបួនសប្តាហ៍កន្លង មកនេះតើអ្នកឬសមាជិកគ្រួសារណាម្នាក់ បង្កើនការប្រមូលបាន ខ្យង, ក្តាម, ខ្យង, ត្រី លៀស, ត្រកួន, ព្រលិត, ក្រអៅឈូក ជាពិសេសដើម្បីទទួលបាន អាហារច្រើនជាងសម្រាប់គ្រួសារ?				
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Focus on the past 7 days. ផ្តោតលើ 7 ថ្ងៃកន្លងទៅ

Ask respondents to recall if they ate the following food items over the **past 7 days**. Items could be smoked, dried, salted, fermented or have undergone any other preservation technique. Amounts reported are for the whole household.

សួរអ្នកឆ្លើយសំណួរឱ្យរំលឹកឡើងវិញប្រសិនបើអ្នកញាំអាហារដូចខាងក្រោមក្នុងរយៈពេល 7 ថ្ងៃចុងក្រោយ។ សេចក្តីរាយការណ៍ដូចជា បានជក់បារី, ដំណាប់, ត្រីប្រលាក់, ទឹកផ្លែឈើត្រាំ ឬមានបច្ចេកទេសប្រចាំគ្រួសារផ្សេងៗ ទៀត ណាមួយសម្រាប់គ្រួសារទាំងមូល។ ផ្សេងៗទៀត.....

Food item សារជាតិម្ហូបអាហារ	12.8 Number of days eaten over last 7 days ចំនួនថ្ងៃដែល ទទួលបាន ក្នុងរយៈពេល 7 ថ្ងៃចុងក្រោយ	12.9 Quantity in (Kg) (Last 7 days in total) បរិមាណ ជា (Kg) (សរុប 7 ថ្ងៃចុងក្រោយ)
Fish ត្រី		
Aquatic animals e.g. Snails, Shellfish, Crabs and Snakes ខ្យង , ត្រី, ក្តាម និងពស់		

Need a conversion table from units to kg) e.g. 3 snakes = 500 g ត្រូវការតារាងបម្លែងពីឯកតាទៅជាគីឡូក្រាម.២ (ពស់ 3 = 500 ក្រាម

Part ផ្នែកទី III
Community Fishery Survey ការស្ទង់មតិសហគមន៍នេសាទ

Details about the Community Fishery (CFi) ព័ត៌មានលម្អិតអំពីសហគមន៍នេសាទ

13. Are you a member of the CFi? តើអ្នកជាសមាជិក ស.ន ? Yes បាទ_____ No ទេ_____

14	Description of CF ពិពណ៌នាអំពី ស.ន	
14.1	What is the name of the CF? តើ ស.ន មានឈ្មោះអ្វី?	
14.2	Where is it located? តើមានទីតាំង ស្ថិតនៅកន្លែងណា ?	Village ភូមិ _____ Commune ឃុំ _____ District ស្រុក _____ Province ខេត្ត _____
14.3	Total area of CFi (ha) : មានផ្ទៃដី សរុបប៉ុន្មាន (ហិកតា)	_____ ហិ.តា Unknown អត់ដឹង _____
14.4	TOTAL number of CFi members ចំនួនសមាជិក ស.ន សរុប	_____ នាក់ Unknown អត់ដឹង _____
14.5	Number of FEMALE CFi members ចំនួនសមាជិក ស.ន ជា ស្រី	_____ នាក់ Unknown អត់ដឹង _____

15	Management/operation of CFi ការគ្រប់គ្រង/ដំណើរការនៃ ស.ន	
15.1	Has the government (such as fisheries cantonment) provided technical assistance to the establishment of community fishery? តើមានស្ថាប័នជំនាញ (ដូចជា ខ័ណ្ឌរដ្ឋបាលជលផល) បានផ្តល់ជំនួយបច្ចេកទេសក្នុងការបង្កើត ស.នដែរឬទេ?	Yes មាន _____ No អត់ _____ Unknown អត់ដឹង _____
15.2	Has some organization (such as an NGO) supported the community fishery? តើមានស្ថាប័នផ្សេងទៀត (ដូចជា អង្គការក្រៅរដ្ឋាភិបាល) បានគាំទ្រ Should be delete ? ស.នដែរឬទេ?	Yes មាន _____ No អត់ _____ Unknown អត់ដឹង _____
15.3	If yes, name of organization ប្រសិនបើមាន ឈ្មោះ នៃ ស្ថាប័ន	
15.4	Are there CFi by-laws and internal regulations ស.ន មាន លក្ខខ័ណ្ឌ: និងបទបញ្ជាផ្ទៃក្នុង	Yes មាន _____ No អត់ _____ Unknown អត់ដឹង _____

15.6	Have boundaries and mapping of the community fishing areas been completed? តើការគូរផែនទី និង ផែនទី ស.ន បានបញ្ចប់ហើយឬនៅ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.7	Is there a Community Fishery Area Agreement? តើ មានកិច្ចព្រមព្រៀងកន្លែងនេសាទសហគមន៍ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.8	Has there been registration and recognition of the community fisheries by FiA and MAFF? តើមានការ ចុះបញ្ជី និងទទួលស្គាល់ ស.ន ដោយ រដ្ឋបាលជលផល និងក្រសួងកសិកម្មដែរឬទេ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.9	What year was the CFi registered? តើ ស.ន បានចុះ បញ្ជី នៅឆ្នាំណា ?	Unknow អត់ដឹង ____
15.10	Is there a Community Fishery Area Management Plan? មានផែនការគ្រប់គ្រង ស.ន ដែរឬទេ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.11	Are there rules and <i>internal</i> regulations for fisheries management in CFi? មានច្បាប់ និង បទបញ្ជា ផ្ទៃក្នុង សម្រាប់គ្រប់គ្រង ជលផលក្នុង ស.ន ដែរឬទេ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.12	Are there rules and regulations against illegal fishing? តើមានច្បាប់និងបទបញ្ជាប្រឆាំងនឹងនេសាទ ខុសច្បាប់ដែរឬទេ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.13	Does the CFi have an activity plan for the next six months? តើ ស.ន មានផែនការសកម្មភាពសម្រាប់ ៦ខែ ខាង មុខទេ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.14	Does your CFi the conservation area? តើ ស.ន របស់ អ្នកមានកន្លែងអភិរក្ស ?	Yes មាន____No អត់____Unknown អត់ដឹង____
16.15	What is the size of the conservation area? តើកន្លែង អភិរក្សមានទំហំប៉ុន្មាន ?	____ ha. Unknow អត់ដឹង____
15.16	Is the conservation area useful for the conservation of the fishery? តើកន្លែងអភិរក្សមានប្រយោជន៍សម្រាប់ ការអភិរក្សជលផលដែរឬទេ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.17	Are there conflict over fisheries, fishing area and other resources in the area? តើមានជំលោះលើការ នេសាទ ហ្មស កំរិត, កន្លែងនេសាទ និងធនធានផ្សេង ទៀតនៅក្នុងតំបន់នេះដែរឬទេ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.18	What types of conflict? តើមានជំលោះអ្វីខ្លះ ?	

15.19	Does the CFI has a mechanism to resolve conflicts? តើ ស.ន មានយន្តការដើម្បីដោះស្រាយទំនាស់នោះទេ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.20	Does the CFI help to resolve conflict in the fisheries? តើ ស.ន ជួយដោះស្រាយទំនាស់ក្នុងវិស័យ ជលផលទេ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.21	How does the CFI normally resolve conflicts? តើ CFI ជាធម្មតាដោះស្រាយជម្លោះដោយរបៀបណា ?	
15.22	Is illegal fishing a problem? តើការនេសាទខុសច្បាប់ គឺជាបញ្ហាទេ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
15.23	What type of illegal fishing occurs? តើការនេសាទ ខុសច្បាប់អ្វីខ្លះ កើតមានកន្លងមក ?	
15.24	What percent (%) of total annual fish harvest comes from illegal fishing? តាមការប៉ាន់ស្មានផលត្រីសរុប ប្រចាំឆ្នាំបាន មកពីការនេសាទខុសច្បាប់ មានប៉ុន្មានភាគ រយ ?	_____ %
15.25	Is the government taking effective action to reduce illegal fishing? តើរដ្ឋាភិបាលចាត់វិធានការដែលមាន ប្រសិទ្ធភាព ក្នុងការ កាត់បន្ថយការនេសាទខុសច្បាប់ ?	None អត់ (0%) Some ខ្លះ (50%) A great deal ប្រសិទ្ធភាព (100%) _____ %
15.26	Does the Community Fisheries Committee work to reduce illegal fishing? តើ គ.ស.ន ធ្វើការដើម្បី កាត់ បន្ថយការនេសាទខុសច្បាប់ដែរឬទេ ?	None អត់ (0%) Some ខ្លះ (50%) A great deal ប្រសិទ្ធភាព (100%) _____ % Unknown អត់ដឹង
15.27	Does the CF do regular patrolling? តើ ស.ន ចុះ ល្បាតជាទៀងទាត់ ?	Yes មាន____No អត់____ Unknown អត់ដឹង____ Sometimes ខ្លះ____ Often ជាទៀងទាត់ ____
15.28	Have illegal fishing activities? តើស្ថានភាពបទល្មើស នេសាទយ៉ាងណាដែរ ?	Increased កើនឡើង____ Remained the same នៅដដែល____ or ឬ decreased ថយចុះ____ compared to last year ប្រៀបធៀបឆ្នាំចុង ក្រោយ ? Unknown អត់ដឹង____
15.29	Is there any enforcement of the rules and internal regulations against illegal fishing? តើមានការអនុវត្ត ណាមួយ នៃច្បាប់ និងបទបញ្ជាផ្ទៃក្នុង ប្រឆាំង នឹងការ នេសាទខុសច្បាប់ ?	None អត់ (0%) Some ខ្លះ (50%) A great deal ប្រសិទ្ធភាព (100%) _____ % Unknown អត់ដឹង____
15.30	Can the CFI punish those who break the rules and regulations? តើ ស.ន អាចដាក់ទោសដល់អ្នកណាដែល បានធ្វើខុសច្បាប់ និង បទបញ្ជាផ្ទៃក្នុង ?	No ទេ____ Yes, informally បាទ, ក្រៅផ្លូវការ____

		Yes, formally បាទ, ជាផ្លូវការ _____ Unknown អត់ដឹង _____
15.31	What type of punishment? តើការដាក់ទណ្ឌកម្មបែបណា ?	Unknown អត់ដឹង _____
15.32	Does the CF know what to do when poachers are caught? តើ ស.ន ដឹងពីអ្វីដែលត្រូវធ្វើនៅពេលដែលគេចាប់បានជនល្មើស ?	Unknown អត់ដឹង _____
15.33	What was the compliance with fishery rules FIVE YEARS AGO? តើកាលពីប្រាំឆ្នាំមុន ការប្រតិបត្តិតាមច្បាប់ជលផល មានសភាពដូចម្តេចដែរ ?	No one obeys the fisheries rules _____ គ្មាននរណាម្នាក់គោរពច្បាប់ជលផលទេ _____ Some people obey the rules _____ មនុស្សមួយចំនួនគោរពច្បាប់ជលផល _____ Everyone obeys fisheries rules _____ មនុស្សគ្រប់គ្នាគោរពច្បាប់ជលផល _____ Unknown អត់ដឹង _____
15.34	What was the compliance with fishery rules NOW? តើបច្ចុប្បន្ន ការប្រតិបត្តិតាម ច្បាប់ជលផល មានសភាពដូចម្តេចដែរ ?	No one obeys the fisheries rules _____ គ្មាននរណាម្នាក់គោរពច្បាប់ជលផលទេ _____ Some people obey the rules _____ មនុស្សមួយចំនួនគោរពច្បាប់ជលផល _____ Everyone obeys fisheries rules _____ មនុស្សគ្រប់គ្នាគោរពច្បាប់ជលផល _____ Unknown អត់ដឹង _____
15.35	Are there indigenous people (non-Khmer) in the village? តើមានជនជាតិភាគតិច (មិនមែនខ្មែរ) នៅក្នុងភូមិដែរឬទេ ?	Yes មាន ___ No អត់ ___ Unknown អត់ដឹង ___
15.36	If yes, are there indigenous people members of the CFI? ប្រសិនបើមាន / តើមានជនជាតិដើមភាគតិចដែលជាសមាជិកនៃ CFI ដែរឬទេ ?	Yes មាន ___ No អត់ ___ Unknown អត់ដឹង ___
15.37	Is your participation to the CFI operation satisfactory? តើការចូលរួមរបស់អ្នកចំពោះប្រតិបត្តិការស.ន ពេញចិត្ត ដែរឬទេ ?	Yes មាន ___ No អត់ ___ Unknown អត់ដឹង ___
15.38	Is corruption an issue in the CFI management? តើអំពើពុករលួយគឺជាបញ្ហានៅក្នុងការគ្រប់គ្រងរបស់ ស.ន ដែរឬទេ ?	Yes មាន ___ No អត់ ___ Unknown អត់ដឹង ___
15.39	Have CFI members received any training or awareness raising on gender concept, gender issues in fishery and aquaculture sector? តើសមាជិក ស.ន ទទួល បានការបណ្តុះបណ្តាល ឬការលើកកម្ពស់ ការ	Yes មាន ___ No អត់ ___ Unknown អត់ដឹង ___

	យល់ដឹងអំពីគំនិតយេនឌ័រ បញ្ហា យេនឌ័រ ក្នុងវិស័យជលផល និងវារីវប្បកម្មដែរឬទេ ?	
15.40	Have you heard about FiA's gender mainstreaming policy and action plan for the fisheries sector? តើអ្នកធ្លាប់ឮ អំពីគោលនយោបាយបញ្ចូលយេនឌ័រ របស់រដ្ឋបាលជលផល សម្រាប់ វិស័យជលផល ?	Yes មាន__No អត់__ Unknown អត់ដឹង__
15.41	Do women participate actively in Community Fisheries activities? តើស្ត្រីចូលរួមសកម្មភាពនៅក្នុងសកម្មភាព ស.ន ដែរឬទេ ?	1-ចូលរួមប្រជុំជាទៀងទាត់, 2- រាយការណ៍ពីការនេសាទខុសច្បាប់, 3- ចុះល្បាត 4- ដាំព្រៃលិចទឹក 5- ផ្សេងៗ
15.42	What are your suggestion to improve the active participations of women in the CFI? តើអ្នកមានយោបល់អ្វីដើម្បីធ្វើឲ្យប្រសើរឡើង ក្នុងការចូលរួមរបស់ស្ត្រី ក្នុង ស.ន	
15.43	Do indigenous people (if any) participate actively in Community Fisheries activities? តើជនជាតិដើមភាគតិច ចូលរួមយ៉ាងសកម្មនៅក្នុងសកម្មភាព ស.ន ឬទេ ?	Yes មាន__No អត់__ Unknown អត់ដឹង__
15.44	What are your suggestion to improve the active participations of indigenous people (if any) in the CFI? តើអ្នកមានអនុសាសន៍អ្វីដើម្បីធ្វើឲ្យប្រសើរឡើង ក្នុងការចូលរួមសកម្ម នៃជនជាតិ ដើមភាគតិច (ប្រសិនបើមាន) ក្នុង ស.ន	

16. Financial sustainability of the CFI និរន្តរភាពហិរញ្ញវត្ថុរបស់ ស.ន

16.1	Does the CFC seek funding? តើ គ.ស.ន បានស្វែងរកមូលនិធិទេ ?	Yes មាន__No អត់__Unknown អត់ដឹង__
16.2	Does the CFC get funding? តើ គ.ស.ន ទទួលបានមូលនិធិដែរឬទេ ?	Yes មាន__No អត់__Unknown អត់ដឹង__
16.3	If yes, how is the CFI financed? បើសិនជាទទួលបាន តើ ស.ន ទទួលបានហិរញ្ញវត្ថុ ពីណាមកខ្លះ ?	No funding មិនទទួលបានមូលនិធិទេ____ Government រដ្ឋាភិបាល____ NGO អង្គការ____ Donor ម្ចាស់ជំនួយ____ Peoples ប្រជាជន____ Companies ក្រុមហ៊ុន____ Church ព្រះវិហារ____ Other (specify) ផ្សេងៗ____

		Unknown អត់ដឹង__
16.4	Does the CFC manage finances well? តើ គ.ស.ន គ្រប់គ្រងហិរញ្ញវត្ថុល្អដែរឬទេ ?	Yes មាន__No អត់__Unknown អត់ដឹង__
16.5	Are the finances record (income and expenditures) of the CF available for all members to examine? តើកំណត់ត្រាហិរញ្ញវត្ថុ (ចំណូល និងចំណាយ) របស់ ស.ន មានឲ្យសមាជិកទាំងអស់ ដើម្បីពិនិត្យមើលទេ ?	Yes មាន__No អត់__Unknown អត់ដឹង__

Details about the Community Fishery COMMITTEE (CFC) ព័ត៌មានលម្អិតអំពី គ.ស.ន

17.1	Is there a Community Fisheries COMMITTEE? តើ មាន គ.ស.ន ?	Yes មាន__No អត់__Unknown អត់ដឹង__
17.2	Are you a member of the Community Fishery Committee? តើអ្នកជាសមាជិក គ.ស.ន ?	Yes មាន__ No អត់__Unknown អត់ដឹង__
17.3	TOTAL NUMBER of Committee members ចំនួន សមាជិកគណៈកម្មាការសរុប	
17.4	Any specific quota for female for committee member? តើមានកំណត់បែកភាពស្រ្តីសម្រាប់ គ.ស.ន ដែរឬទេ ?	Yes មាន__No អត់__Unknown អត់ដឹង__
17.5	Number of FEMALE Committee Members ចំនួនស្រ្តី ជាសមាជិកគណៈកម្មាការសរុប	
17.6	Positions of FEMALE committee members តួនាទីរបស់សមាជិកគណៈកម្មាការជាស្រ្តី	CFC chiefប្រធាន__ Vice chiefប្រធាន__ Accountant គណនេយ្យ____ Extension ផ្សព្វផ្សាយ____ Patrolling ក្រុម ល្បាត____ Unknown អត់ដឹង__
17.7	Does the CFC meet/consult CFi members? តើគ.ស.ន ជួបប្រជុំ /ពិគ្រោះ យោបល់ជាមួយសមាជិក ស.ន ដែរ ឬទេ ?	Yes មាន__No អត់__Unknown អត់ដឹង__
17.8	How often does the CFC meet with members? តើ គ.ស.ន តែងតែជួបជាមួយសមាជិកប៉ុន្មានដង ?	__times/year ដង/ឆ្នាំ Unknown អត់ដឹង__
17.9	Does the CFC report violations? តើ គ.ស.ន រាយ ការណ៍ពីការរំលោភ បំពានឬទេ ?	Yes មាន__No អត់__Unknown អត់ដឹង__
17.10	Does the CFC coordinate with commune council or the Fisheries cantonment? តើ គ.ស.ន ធ្វើការសម្រប សម្រួលជាមួយ ក្រុមប្រឹក្សា ឃុំ ឬខណ្ឌជលផលដែរឬទេ ?	Yes មាន__No អត់__Unknown អត់ដឹង__

17.11	Does the CFC Develop networks with other CFs and organizations? តើ គ.ស.ន បង្កើតបណ្តាញជាមួយ ស.ន និងអង្គការ ដទៃទៀតដែរឬទេ ?	Yes មាន__No អត់__Unknown អត់ដឹង__
17.12	Does the CFC engage with women in the community? តើ គ.ស.ន បានចូលរួមជាមួយស្ត្រីនៅក្នុង សហគមន៍ឬទេ ?	Yes មាន__No អត់__Unknown អត់ដឹង__
17.13	Does the CFC engage in community development projects? តើ គ.ស.ន បានចូលរួមក្នុងគម្រោងអភិវឌ្ឍន៍ សហគមន៍ដែរឬទេ ?	Yesមាន__Noអត់__Unknownអត់ដឹង__
17.14	Were elections and re-elections for the CFC open to everyone? តើការបោះឆ្នោត និងការបោះឆ្នោតឡើងវិញ សម្រាប់ គ.ស.ន បើក ចំហរដល់មនុស្សគ្រប់គ្នាទេ ?	Yes មាន__No អត់__ Unknown អត់ដឹង__
17.15	Does the CFC represent all affected groups in fisheries management decision-making? តើរាល់កាសម្រេចចិត្ត របស់ គ.ស.ន តំណាងឱ្យផលប្រយោជន៍របស់ប្រជាជន ដែរឬទេ ?	Yes មាន__Noអត់__ Unknown អត់ដឹង__
17.16	Are decisions by the CFC made openly or transparently? តើការសម្រេចចិត្តដោយ គ.ស.ន បានធ្វើ ឡើងដោយចំហរ ឬតាមភាពទេ ?	Yes មាន__Noអត់__ Unknown អត់ដឹង__
17.17	How fair was the allocation of access rights FIVE YEARS AGO? កាលពីប្រាំឆ្នាំមុន តើការផ្តល់សិទ្ធិ នេសាទមានភាពស្មើគ្នាឬទេ ?	Unfair _____ មិនមានភាពសមធម៌ទេ _____ Some unfairness _____ មិនមានភាពសមធម៌មួយចំនួន _____ Completely fair មានភាពសមធម៌ទាំងស្រុង _____ Unknown អត់ដឹង__
17.18	How fair was the allocation of access rights NOW? នាពេលបច្ចុប្បន្ន តើការផ្តល់សិទ្ធិនេសាទមានភាពស្មើគ្នា ឬទេ ?	Unfair _____ មិនមានភាពសមធម៌ទេ _____ Some unfairness _____ មិនមានភាពសមធម៌មួយចំនួន _____ Completely fair មានភាពសមធម៌ទាំងស្រុង _____ Unknown អត់ដឹង__
17.19	(For female) Do you have any difficulty in performing your task on the committee? (See the note) (Female only សួរសម្រាប់តែស្ត្រីជាគណៈកម្មកា) (សម្រាប់ស្ត្រី) តើអ្នកមានការលំបាកក្នុងការ បំពេញភារកិច្ចរបស់អ្នក ក្នុង គណៈកម្មការដែរឬទេ ? (មើលកំណត់ ចំណាំខាងក្រោម)	

17.20	(For female) What is your recommendation to improve women's performance as CFC members? (សម្រាប់ស្ត្រី) តើអ្នកមានយោបល់អ្វីដើម្បីកែលម្អការអនុវត្ត ការងាររបស់ ស្ត្រីជា សមាជិក គ.ស.ន ?	
17.21	(For male) According to you, what are women's difficulties in performing tasks in the committee? (See the note) (Male only សួរសម្រាប់តែបុរស) (សម្រាប់បុរស) យោងទៅតាមយោបល់របស់អ្នកតើអ្វីជា ការលំបាក របស់ស្ត្រី ក្នុង ការបំពេញការងារនៅក្នុងគណៈកម្មាធិការ ?	
17.22	(For male) What is your recommendation to improve women's performance as CFC members? តើអ្នកមានអនុសាសន៍អ្វីដើម្បីកែលម្អការអនុវត្តរបស់ស្ត្រី ជាសមាជិក CFC ?	

Note: mention

- Work load បន្ទុកការងារ
- Household work load (involved more in domestic work). បន្ទុកការងារក្នុងផ្ទះ (ជាប់ពាក់ព័ន្ធច្រើន នឹងការងារ ក្នុងគ្រួសារ)
- Lack of support from other CFC members. ខ្វះការគាំទ្រពីសមាជិក គ.ស.ន ដទៃទៀត
- My voice is not heard សំឡេងរបស់ខ្ញុំមិនត្រូវបានឮ
- Lack of support from my family ខ្វះការគាំទ្រពីគ្រួសាររបស់ខ្ញុំ
- Culture constraint ឧបសគ្គវប្បធម៌
- Other ផ្សេងទៀត

18	Impact of CF ផលប៉ះពាល់ នៃ ស.ន	
18.1	Has your access to the river to fish improved as a member of the CFi តើក្នុងនាមអ្នកជាសមាជិក ស.ន មានសិទ្ធិជាអាទិភាពក្នុងការនេសាទប្រសើរជាងមុនដែរឬទេ ?	Yes មាន____No អត់____Unknown អត់ដឹង____
18.2	Do you think that being a member of the CFi has helped you to socially and economically benefit rather than being alone? តើអ្នកគិតថាការធ្វើជាសមាជិករបស់ ស.ន បានជួយអ្នកក្នុង ការ អនុវត្តសង្គម និងសេដ្ឋកិច្ចប្រសើរជាងការនៅតែឯង ?	Yes មាន____No អត់____Unknown អត់ដឹង____
18.3	If yes, please explain how? ប្រសិនបើមាន ,បានដោយរបៀបណា ? More fish catch ចាប់ត្រីបានច្រើន____ More income បានចំណូលច្រើន____ more markets for fish ត្រីមានទីផ្សារច្រើន _____ Alternative livelihood របរចិញ្ចឹមជីវិត_____	

	Other (specify) ផ្សេងៗ បញ្ជាក់	
18.4	How would you describe the condition of the fish stock five years ago? តើអ្នកអ្នកអាចប្រាប់ខ្ញុំបានទេអំពីស្ថានភាព នៃផលត្រី កាលពីប្រាំឆ្នាំមុន?	Very bad អាក្រក់ណាស់_____ bad អាក្រក់_____ neither good nor bad មិនថាល្អ ឬអាក្រក់_____ good ល្អ_____ very good ល្អ ណាស់_____ Unknown អត់ដឹង_____
18.5	How would you describe the condition of the fish stock today? តើអ្នកអ្នកអាចប្រាប់ខ្ញុំបានទេអំពីស្ថានភាព នៃផលត្រី បច្ចុប្បន្ននេះ?	Very bad អាក្រក់ណាស់_____ bad អាក្រក់_____ neither good nor bad មិនថាល្អ ឬអាក្រក់_____ good ល្អ_____ very good ល្អ ណាស់_____ Unknown អត់ដឹង_____
18.6	Do you feel that the CFI has improved the fish stock in the area? តើអ្នកមានអារម្មណ៍ថា ស.ន បានកែលម្អផលស្តុកត្រី នៅក្នុងតំបន់នេះដែរឬទេ?	Yes មាន_____ No អត់_____ Unknown អត់ដឹង_____
18.7	What would you say about the management of the fish resource FIVE YEARS AGO? តើអ្នកគិតយ៉ាងដូចម្តេចចំពោះការគ្រប់គ្រងធនធានផលផលកាលពីប្រាំឆ្នាំមុន ?	Fish resource not managed _____ គ្មានការគ្រប់គ្រងធនធានត្រីទេ _____ Some management initiatives _____ មានការគ្រប់គ្រងមួយចំនួន _____ Good initiatives _____ មានការគ្រប់គ្រងល្អ _____ Good sustainable management _____ មានការគ្រប់គ្រងល្អប្រកបដោយនិរន្តរភាព _____ Unknown អត់ដឹង _____
18.8	What would you say about the management of the fish resource NOW? តើអ្នកគិតយ៉ាងដូចម្តេចចំពោះការគ្រប់គ្រងធនធានផលផលក្នុងពេលបច្ចុប្បន្ន ?	Fish resource not managed _____ គ្មានការគ្រប់គ្រងធនធានត្រីទេ _____ Some management initiatives _____ មានការគ្រប់គ្រងមួយចំនួន _____ Good initiatives _____ មានការគ្រប់គ្រងល្អ _____ Good sustainable management _____ មានការគ្រប់គ្រងល្អប្រកបដោយនិរន្តរភាព _____ Unknown អត់ដឹង _____
18.9	Do you feel that the CFI has improved the habitats (wetlands, flooded forests) for fish in the area? តើអ្នកមានអារម្មណ៍ថា ស.ន បានធ្វើឱ្យប្រសើរឡើងនូវជម្រក (តំបន់ដីសើម និងព្រៃលិចទឹក) សម្រាប់ត្រីនៅក្នុងតំបន់នេះដែរឬទេ?	Yes មាន_____ No អត់_____ Unknown អត់ដឹង_____

19. Impact of management ផលប៉ះពាល់ នៃការគ្រប់គ្រង

19.1	Do you feel that the condition of the fish resource is stable or has improved thanks to management? តើអ្នកមានអារម្មណ៍ថាស្ថានភាពនៃធនធានជលផលមានស្ថេរភាព ឬមានការប្រសើរឡើងដោយសារការគ្រប់គ្រងនេះទេ ?	Yes មាន___No អត់___Unknown អត់ដឹង___
19.2	Do you expect the fishery to maintain its current level of productivity over the next 5 years? តើអ្នករំពឹងថាការនេសាទ នឹងរក្សាកំរិតផលិតភាពដូចបច្ចុប្បន្ន បានរយៈពេល ៥ឆ្នាំ ខាងមុខទៀតទេ ?	Yes មាន___No អត់___Unknown អត់ដឹង___
19.3	If no, why? ប្រសិនបើអត់, ហេតុអ្វី ?	
19.4	In your opinion, how can the management of fisheries be improved (recommended action for fish stock sustainability and better social organization)? តាមយោបល់របស់អ្នក តើការគ្រប់គ្រងជលផលត្រូវបានកែលម្អ (សកម្មភាពដែលបានណែនាំសម្រាប់និរន្តរភាព ផលស្តុកត្រី និងអង្គការសង្គមស៊ីវិលបានប្រសើរជាងមុន) ?	

20. EXTENSION SERVICES សេវាកម្មផ្សព្វផ្សាយ

20.1	<p>How do you usually receive information relating to economic and fisheries management related activities? (Rank in order of frequency: 1 to 9, noted from rank number 1 for information is often received until number 9 for information is less received).</p> <p>ជាទូទៅតើអ្នកទទួលព័ត៌មានដែលទាក់ទងនឹងសកម្មភាពពាក់ព័ន្ធនឹងការគ្រប់គ្រងសេដ្ឋកិច្ច និងធនធានជលផល ? (ចំណាត់ថ្នាក់តាមលំដាប់លំដោយពី លេខ 1 ដល់ 9។ កំណត់សំគាល់ពីចំណាត់ថ្នាក់លេខ 1 សម្រាប់ព័ត៌មានត្រូវបានទទួលញឹកញាប់ និងបន្តបន្ទាប់រហូតដល់លេខ 9 សម្រាប់ព័ត៌មានត្រូវបានទទួលតិចជាងគេ)</p> <div style="margin-top: 10px;"> <input type="checkbox"/> a. Word of mouth (friends and neighbors) ពីមាត់មួយទៅមាត់មួយ (មិត្តភក្តិ និងអ្នកជិតខាង) </div> <div style="margin-top: 5px;"> <input type="checkbox"/> b. Groups, association, network (CF, Community Base Organization) CBO, and other groups) ក្រុម, សមាគមន៍, បណ្តាញ (ស.ន, សហគមន៍មូលដ្ឋាន និង ក្រុមដទៃទៀត) </div> <div style="margin-top: 5px;"> <input type="checkbox"/> c. Village and commune chiefs/officials តាមមេភូមិ និងមេឃុំ </div> <div style="margin-top: 5px;"> <input type="checkbox"/> d. Village/commune police តាមប៉ូលីសភូមិ និងប៉ូលីសឃុំ </div> <div style="margin-top: 5px;"> <input type="checkbox"/> e. Provincial and district government departments មន្ទីរ និងការិយាល័យតាមស្រុក </div> <div style="margin-top: 5px;"> <input type="checkbox"/> f. NGOs អង្គការក្រៅរដ្ឋាភិបាល </div> <div style="margin-top: 5px;"> <input type="checkbox"/> g. Television/Radio ទូរទស្សន៍/វិទ្យុ </div> <div style="margin-top: 5px;"> <input type="checkbox"/> h. Business people and money lenders អ្នករកស៊ី និងតាមអចងការប្រាក់ </div> <div style="margin-top: 5px;"> <input type="checkbox"/> i. Other, specify ផ្សេងទៀតបញ្ជាក់..... </div>
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20.2	<p>Do extension agents contact you or any women fishers to provide technical information or market information for your fishing and aquaculture?</p> <p>មានភ្នាក់ងារផ្សព្វផ្សាយទាក់ទងអ្នក ឬក៏អ្នកនេសាទស្រ្តីណាម្នាក់ ដើម្បីផ្តល់ព័ត៌មានបច្ចេកទេសព័ត៌មានទីផ្សារ សម្រាប់ការនេសាទ និងការចិញ្ចឹមត្រីរបស់អ្នក ?</p> <ul style="list-style-type: none"> • Yes មាន_____ • No អត់_____
20.3	<p>In your opinion, do you feel that the local administration is helpful to you if you request any assistance, especially with respect to CFI conflicts?</p> <p>នៅក្នុងគំនិតរបស់អ្នកតើអ្នកគិតថាអង្គបាលមូលដ្ឋានមានប្រយោជន៍ចំពោះអ្នកទេបើអ្នកស្នើសុំជំនួយណាមួយជាពិសេសទាក់ទងនឹងជម្លោះ CFI?</p> <ul style="list-style-type: none"> • Yes មាន_____ • No អត់_____
20.4	<p>Question to both men and women: សំណួរសួរទាំង បុរស និងស្ត្រី</p> <p>What is the challenge FOR WOMEN to access information and services</p> <p>អ្វីដែលជាបញ្ហាប្រឈមសម្រាប់ស្ត្រីដើម្បីទទួលបានព័ត៌មាននិងសេវាកម្ម</p>
20.5	<p>What are your recommendations to improve the extension service?</p> <p>ដើម្បីកែលម្អសេវាកម្មបន្ថែម តើអ្នកមានអនុសាសន៍របស់អ្វីខ្លះ ?</p>

Background

The project “Mekong Integrated Water Resources Management - Phase III” is funded by the World Bank. The objective of this project is to establish the foundation for effective water resource and fisheries management in the northeast of Cambodia.

Within this project, Component 1 (Fisheries and aquatic resources management in Northern Cambodia) is executed by the Fisheries Administration and implemented by the Inland Fisheries Research and Development Institute. The objective of this component is to improve the management of fish and aquatic resources in selected areas in Kratie and Stung Treng provinces.