



W+ Verification Report

The African Women's Network for Community Management of Forests

Reducing the Degradation of Mangroves and other Ecosystems
through Improved Fish Smokers and Stoves



W+ VERIFICATION REPORT

Reducing the Degradation of Mangroves and other Ecosystems through Improved Fish Smokers and Stoves Measuring the increase in Income & Assets

Document Prepared by Dibya Devi Gurung – Integrity Verifiers LLC

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Table of Contents

SUMMARY	4
1. INTRODUCTION.....	6
1.1 Objective	6
1.2 Scope and Criteria.....	6
1.3 Level of Assurance	7
2. VERIFICATION PROCESS	9
2.1 Method and Criteria	9
2.2 Document Review	9
2.3 Interviews and Consultations	10
2.4 Site Inspections.....	12
2.5 Resolution of Findings	12
2.6 Forward Action Request.....	12
3. VALIDATION FINDINGS.....	14
3.1 Project Description Deviations.....	14
3.2 Project Eligibility of any new activities initiated during monitoring period.....	14
3.3 Method Deviations.....	14
4. VERIFICATION FINDINGS	15
4.1 Project Implementation Status.....	15
4.2 Accuracy of Calculations of Women's Empowerment Benefits.....	15
4.3 Quality of Evidence to Determine Women's Empowerment Benefits	17
5. W+ RESULTS	18
5.1 W+ Domains.....	18
5.2 Direct Payment Mechanism	19
6. ANALYSIS OF W+ RESULTS	20
6.1 Current Performance.....	20
6.2 Non-Permanence Risk Analysis.....	20
7. VERIFICATION (AUDIT) CONCLUSION	21
APPENDIX 1: CONSULTATION SCHEDULE.....	23
APPENDIX 2: FIELD REPORT	24
APPENDIX 3: LIST OF WOMEN FISH SMOKERS INTERVIEWED IN THE FIELD	29
APPENDIX 4: SAMPLES OF FIELD REPORT IN FRENCH	30



Summary

This aim of the verification report is to confirm the results contained in Monitoring Report of W+ Standard, through its application of the Income and Assets method to measuring the outcomes of the interventions of the project “Reducing the degradation of mangroves and other ecosystems through improved fish smokers” on women beneficiaries. The measurement is for the period from the project’s initiation in September 2019 to October 2024. Presently, the project is being implemented in the Manoka island in the Littoral Region of Cameroon, in four fishing camps, Dahomey, Plateau, Sandje and Nyangadou. Among these camps, Dahomey and Nyangadou were selected for the W+ measurements due to the following reasons:

- 1) Abundant fish availability,
- 2) Higher number of women engaged in fish smoking,
- 3) Greater participation of women in the local fishing groups, and
- 4) Proximity to boats used for transporting fish to the markets.

Women Fish Smokers participating in the project received the following technologies and trainings.

- Three new fish smoking technologies were provided to the Association des Femmes Fumeuses de Manoka (AFUMA): two metallic and one clay brick stoves.
- This was accompanied by intensive training on the use of the stoves combined with strengthening AFUMA’s for organizational capacity

The verification was conducted in June 2024. It included a review of documentation and evidence provided by the WOCAN monitoring team, followed by virtual interviews of project staff, and a site visit to conduct in-person individual interviews with the women fish smokers. The virtual interviews and consultations with the Project Developer team was conducted by Dibya Devi Gurung, of Integrity Verifiers, LLC. The site visit and interviews with the women fish smokers were conducted by Ngon Baman Yoya Ceraphine, an experienced community facilitator who conducted the interviews in French. She interviewed 15 women fish smokers involved in the project and engaged with the project staff during the process.

The verification process followed four steps:

- Step 1. Data analysis to verify the W+ Income and Assets formula calculation.
- Step 2. Virtual interviews and discussions with the Project Developer team.
- Step 3. In-person interviews conducted with randomly selected women fish smokers who had participated in the monitoring survey



In addition, the following documents prepared by the monitoring team were reviewed:

- W+ Project Idea Note (PIN)
- W+ Project Design Document (PDD)
- W+ Monitoring Report, February 2024, including interview data sets, survey questionnaire and appendices.

Based on the information and evidence reviewed, the verification process demonstrates that there has been significant improvement in income and assets of 160 women project beneficiaries.

Additionally, participants consulted for the verification reported improvements across various indicators, including increased self-esteem and recognition within their households and community. They also experienced greater acknowledgment as significant economic actors, receiving invitations from local authorities to participate in decision-making forums. Additionally, they noted improvements in group savings and increased capability to independently decide on their income for spending and investments in assets. However, they also reported that due to the limited number of stoves and ovens, some women, particularly those living far away from kitchen facilities, have had to spend more time travelling to access these facilities.

These positive changes observed among the women fish smokers involved in the project activities have led the verification team to certify these activities as effectively improving wellbeing and gender relations within households and communities. The verification team expresses confidence in these outcomes and recommends their continuation. A total of 2007 W+ credits have been generated by the project during the two year crediting period, from February 2022 to February 2024.



1. Introduction

1.1 Objective

The purpose of the verification process was to confirm the outcomes resulting from the implementation of the W+ Income & Assets methods through the African Women's Network for Community Management of Forests (REFACOF) project delivered in the Manoka island located in the Littoral region of Cameroun from September 2019 to October 2020. The verification consultation activity included in this report took place over 5 days in June 2024.

1.2 Scope and Criteria

The scope of the verification included the W+ Income and Assets domain and considered the following indicators as evidence of successful implementation, as outlined in the Project Development Document.

- Children educated
- Health improved
- Women's contribution to social events
- Number of women in the saving groups
- Number of women as part of the traditional management committee/structure
- Women's contribution in household decisions
- Number of women invited to official ceremonies by the Local administration Officer and traditional rulers
- Women's participation in activities outside the camps, the village and the island
- Type of assets they bought
- Amount saved in saving groups
- Amount of increased income
- Increase in the quantity of smoked fish produced
- Number of improved models of fish smokers implemented
- Number of AFUMA members participating in the training
- Governance of the AFUMA association
- Time spent to rest and enjoy leisure/recreational activities
- Increased participation at social events



Additionally, the Project's Intentionality for women's empowerment and Do-No-Harm indicators were determined based on the following set of evidence.

- The project has policies and mechanisms such as specific strategies, a targeted budget, and an M&E plan for women's empowerment.
- Participants did not experience any problems participating in the project, nor did they have to resort to selling personal assets to participate in project activities.

1.3 Level of Assurance

The improvements and changes justify the level of reasonable assurance because they demonstrate significant positive outcomes. There is reasonable assurance regarding the percentage of change in income and assets. The stakeholder engagement and verification consultation process evidenced the following outcomes as outlined.

W+ Domain	Desired Outcome	Results
Income & Assets	• Increase in income • Increase in assets • Increased perception of well being	The income of the project beneficiary households increased by 125.4% compared to that of non-beneficiary households after the project intervention.

The incomes of project beneficiaries reportedly increased by 125.4% compared to non-beneficiaries following the project intervention (Source: monitoring report). To verify this increase, the verification team collected income and perceived benefits data from the project to validate the monitoring report's findings. Fifteen households were interviewed, including 10 from beneficiary households and 5 from non-beneficiary households.

The verification sample data results indicated a 128.8% change in income for beneficiary households compared to non-beneficiary households, which is slightly higher than the 125.4% change observed in the monitoring data. The difference in average income between beneficiary and non-beneficiary households in both the monitoring and verification sample data is statistically insignificant¹. This slight variation of change can be attributed to the relatively small sample size used for verification. However, the variation remains within the acceptable range thereby affirming the validity of the reported income change stated in the monitoring report.

¹ In comparing the monitoring and verification sample data results for beneficiary households, the t-test yielded a t-value of 0.89 and a p-value of 0.37, indicating no statistically significant difference between the two sets of data. Similarly, among non-beneficiary households, the change in income is not statistically significant (t = 0.71, p = 0.45).



The improvement in smoked fish quality, along with improved access to better stoves and ovens for smoking fish, increased production, and better market access contributes to higher income and savings. There is a noticeable improvement from the initial low-income levels, and the use of income for children's education, food and improved housing and kitchen equipment further demonstrates their progress.

These improvements justify a level of 'reasonable assurance.'

1.4 Project Monitoring & Evaluation Report Summary

The REFACOF applied the Income and Assets domain of the W+ Standard to measure the impacts from the project's activities on women and their communities. This includes increased access to improved stoves and ovens, and enhanced knowledge and techniques for smoking and marketing resulted in reduced processing time and improved quality (color and texture), contributing in increased incomes for women.

The application of the W+ Income and Assets Domain on **160 women** beneficiaries demonstrates increased incomes for women beneficiaries through access to a new technology, application of newly acquired skills for improved processing and marketing resulting in the following:

A 125.4% of change in Income and Assets from baseline conditions and resulted in the generation of 2007 W+ credits.



2. Verification Process

2.1 Method and Criteria

This verification report considered the W+ Income and Assets domain. Monitoring data gathered from field research was verified using the following approaches.

- Examination of the data collection process as presented in the Monitoring Report and accuracy of the W+ calculation approach.
- Virtual and in-situ interviews and group discussions to:
 - Verify the presence of the projects and their activities
 - Gain an understanding of the level and nature of the impacts on women who have participated in the project
 - Gain an understanding of the project developer's purpose and processes of implementing the activities and plans to address the challenges outlined in the gender analysis component of the PDD

2.2 Document Review

To verify the results of the Income and Assets domain, the following method documents were reviewed:

- W+ Project Idea Note (PIN)
 - Background of the project
- W+ Project Design Document (PDD)
 - Gender Analysis
 - Women's Empowerment Plan (WEP)
 - Monitoring and Evaluation Plan
 - Benefit Sharing Mechanism
 - Survey questionnaire
- Monitoring Report, February 2024, including,
 - Summary and Analysis of W+ Results (Including calculation of the percentage of change)
 - W+ unit calculation approach



Each document was cross-checked against the others and with the findings from the interviews and stakeholder consultation to ensure consistency and accuracy.

This thorough documentation review adequately supported the presented findings.

2.3 Interviews and Consultations

The interview process consisted of a two- step approach.

- **Step 1:** Verification interviews with the project developers included an initial verification meeting, followed by an in-depth virtual verification meeting with the Project leader and Field Manager on 7th June 2024. The primary aim of these meetings was to gather the project developers' perspectives on achievements, challenges, future strategies, and deeper insights into their intentions regarding women's empowerment, as well as to validate information from the February 2024 Monitoring Report. This verification was conducted by Dibya Devi Gurung, W+ Verifier. Also, to identify what remedial steps were planned to address the challenge of women's access to the technology. The remedial actions included analyzing baseline data collected before project implementation, which provided clear insights into households and groups that could not be covered due to resource limitations. Following a meeting with the women fish smokers, an agreement was reached to prioritize these households in the next phase of the project, subject to obtaining necessary resources.
- **Step 2:** in person verification interviews with the women beneficiaries were conducted between 10th and 15th June 2024 by Ngon Baman Yoya Ceraphine, an independent and experienced local community facilitator. A total of 15 women from Dahomey and Nyangadou villages from Manoka commune of Cameroon, which were the two main project implementation villages, were selected for these interviews. The sampling method used to identify these beneficiaries was purposive random sampling, involving the selection of these two villages where the maximum number of women beneficiaries and installed stoves were. From each village, a list was compiled of 20 women stove users and 10 non users, from which 10 users and 5 non-users were randomly chosen for the interview (Appendix 3). The interviews were conducted in French and subsequently translated into English.

The checklist was prepared by the verification team to verify the details in the Monitoring report. The questions listed below were categorized as broad questions for the project developers and the women beneficiaries, serving as a guide rather than prescriptive directives. This approach ensured flexibility and enabled the verifier to gain insights into the reported experiences of the women.

**Discussions Questions for the women beneficiaries**

Confirmation that women have participated and had / have access to project activities to build their knowledge, skills and income.

Monthly income from dry fish

- Do you think your income has increased due to the use of the improved oven?
- Do you think your income has increased due to the sale of smoked fish?
- Are you a member of the saving group? If yes, how much have you saved in these groups? Monthly?

Time saved

- Do you think you have saved time due to the new fish drying technology?
- How did you use the time saved?

Do No harm Questions

- Did you have any problems participating in this project?
- Did you have to sell your goods (jewelry, etc.) or take out credit to be able to pay the costs relating to this project?
- Has the increase in income from the use of the improved oven created problems (e.g., emotional abuse, violence, social sanctions, marital conflicts)?

Discussion Questions for the Project Developers

- On what basis did you select the women beneficiaries? What were the selection criteria?
- Were there issues related to access? Did all women beneficiaries have equal access to the improved technologies? Who could be included and who could not?
- How do you plan to avoid potentially harmful situations created by lack of access and improper selection criteria? What are your proposals to improve this situation?
- In your opinion in what ways has the improved technologies improved women's lives?
- Have the improvements in women's income and health led to change in gender relations or addressed gender imbalances?

2.4 Site Inspections

A site visit by Ngon Baman Yoya Ceraphine, an independent and experienced local community facilitator was undertaken between 7th and 11th June 2024, who conducted 15 verification interviews with the women fish smokers. These individual verification interviews addressed each of the identified indicators as evidence of change, and the summary of responses are attached in Appendix 2.

From these observations and discussions, it was clear that the project successfully achieved its goals, thereby supporting the delivery of the project outcomes.



Picture 1. Interview with women fish smokers from Dahomey village (8 June 2024)



Picture 2. Interview with women fish smokers from Nyangadou village (10 June 2024)

2.5 Resolution of Findings

There were no corrective actions or significant clarification required during the verification process.

2.6 Forward Action Request

The project has enabled women fish smokers to improve their material condition and social position in terms of increased income and assets and time saving.



However, as stated in the gender analysis of the PDD, and acknowledged by the project developers, not all women fish smokers have equal access to the improved stoves and ovens due to resource limitations. Therefore, future monitoring reports ensure that the project developer, in consultation with the beneficiaries and local Association of Women Fish Smokers in Manoka (AFUMA) have devised a strategic plan to redress the gap. The strategic plan should include women from other remote fish camps and ensure maintenance of the improved stove, as well as the organizing and leadership capacities of AFUMA members in the next phase, to ensure broader benefits.



3. Validation Findings

3.1 Project Description Deviations

There are no deviations from the project description.

3.2 Project Eligibility of any new activities initiated during monitoring period

The project qualifies for the consideration under the W+ Standard's eligibility criteria. The verification team has thoroughly examined the method (Income and Assets). After reviewing the method documents and conducting wider consultations, the team confidently affirms that the project activities and implemented methods align with the project's stated purpose and have been effectively applied and verified.

3.3 Method Deviations

There have been no method deviations applied to this program.



4. Verification Findings

4.1 Project Implementation Status

The project has been implemented in accordance with the project description and monitored effectively using appropriate sampling techniques, as well as group and individual interviews. No significant material discrepancies have been found between the implemented monitoring system, the project description, and the W+ methods applied. The verification team can conclusively confirm that the project was implemented as outlined in its description.

4.2 Accuracy of Calculations of Women's Empowerment Benefits

To ensure the highest standards of data quality, the following verification methods were applied to address the overall questions:

1. Were the steps for the W+ calculation followed?

- Verification: Yes, the steps for the W+ calculation were followed according to the guidelines when generating W+ units. However, in the absence of a baseline, the comparison was made with non-beneficiary households that are more or less similar to the project beneficiary households in setting.

2. Does the sampling method follow the W+ data collection methods?

- Verification: Yes, the sampling method adheres to W+ data collection methods. The sample size was calculated in accordance with W+ guidelines, achieving a 95% confidence level, which exceeds the minimum requirement of 90%.

3. Is there reasonable assurance that the data collection methods being used do not produce systematically biased data?

- Verification: Yes, there is reasonable assurance that the data collection methods do not produce systematically biased data. The verification team examined the selection process of sample households and found no evidence of biased selection. The households were chosen randomly from the list of beneficiaries.

**4. Does the information collected measure what it is supposed to measure?**

- Verification: Yes, the information collected measures what it is supposed to measure. This income module collects data following the guidelines from W+, with program-specific contextualization.

5. Are mechanisms in place to prevent unauthorized changes to the data?

- Verification: Yes, mechanisms are in place to prevent unauthorized changes to the data. The data was collected using Kobo Collect on mobile devices. Once submitted, enumerators do not have the authority to edit it. Meanwhile, the data analyst performs real-time data checks to identify any inconsistencies.

6. Has the data analysis method/W+ calculation been documented?

- Verification: Yes, the data analysis method and W+ unit generation have been thoroughly documented. The verification team reviewed the documentation and double-checked the data used for the calculations. They reran the provided syntax file and found no inconsistencies, confirming the accuracy and reliability of the documented procedures. It was confirmed that the following formula is used as of the W+ guidelines.

Calculation of the percentage of change=

$$\frac{[\text{Beneficiary average income} - \text{Non beneficiary average income}]}{\text{Non beneficiary average income}} \times 100$$

Calculation of the number of W+ units

1 unit = 1 % improvement in one woman's life, in relation to one domain over the monitoring period.

Total number of units= percentage of change x number of woman beneficiaries

In conclusion, the verification process confirmed that all aspects of data quality assurance were meticulously followed, ensuring the integrity and reliability of the collected data.



4.3 Quality of Evidence to Determine Women's Empowerment Benefits

The evidence used to determine the women's empowerment benefits were as follows.

- The Monitoring Report for February 2024, including the explanation data flow from data generation to data aggregation and unit calculation.
- Interviews and discussions with women participating in “Reducing the degradation of mangroves and other ecosystems through improved fish smokers and stoves” project.
- Interview with the Project developer.
- The data derived directly from women beneficiaries and stakeholders, collected and analyzed using rigorous social and ethnographic methods and approaches.
- The interviews facilitated and the data analyzed by skilled and experienced experts proficient in gender, social and ethnographic methods and techniques.

The results from the W+ monitoring report matches with the verification findings obtained from the Key Informant's Interviews (KII's) with 15 women fish smokers (10 users and 5 non-users), as well as interviews and series of discussions with three project developers and W+ monitoring team. The verification process confirms that there has been:

- Increase in income among women who used the improved stoves and ovens. The verification sample showed a 128.8% change in income compared to non-beneficiary households, slightly higher than the monitoring results
- Improved health conditions due to reduced heat from improved oven, better sleep and nutrition, and increased investments in their children's education.
- Increased social status and self-esteem among women, leading to recognition and invitations from local administrative offices to participate as economic actors in different forums. Relationships with their husbands have also improved, with more joint decision-making on earnings.
- However, due to project resource limitations, women fish smokers living further from the improved kitchen stoves faced time constraints in fully accessing their benefits.

In conclusion, the field findings are comprehensive and reliable, reflecting the perspectives of women fish smokers, the direct beneficiaries of the project, in both quality and quantity.



5. W+ Results

5.1 W+ Domains

Method (W+ Domain)	Income and Assets
Outcomes	• Increase in Income • Increase in assets • Increased perception of well being
Indicator	• Large proportion of women users perceived increase in income. • Enabled women to generate additional income and assets. • Women Users perceived improved well- being.
Situation	• A significant increase in income among women who have access to the stoves was evidenced by a rise in their self-esteem and self-worth, enabling them to increase their savings and independently decide to invest their income, and gain recognition in their community as economic actors. However, for women located far from the stove kitchens, travel time was an issue, and the number of stoves distributed was inadequate for all women fish smokers.
Justification	• There has been a significant increase in income and some assets among women who have access to the project supported improved stoves and oven. These women are utilizing the improved technology to enhance the production, quality and marketing of the smoked fish. The technology has enabled them to save time and money previously spent on collecting or buying fuel wood. The income generated is now being used to cover household, fishing, fish processing expenses, as well as to invest in children's education and fixed assets. These outcomes substantiate a significant improvement in the women's circumstances, rated at +2.
Evidence	• Monitoring Report • Interviews and discussions with participants from across the project delivery locations. • Interview and discussions with the Project Developer team.



5.2 Direct Payment Mechanism

The funds generated from the sale of W+ units can be disbursed to the women fish smokers in two ways:

- a) **Option 1:** Through REFACOP, an intermediary organization established in 2009. REFACOP is governed by Law N°090/053 of 19 December 1990 and is recognized as a public utility and authorized to receive funds from abroad. It maintains a robust financial management system with regular audits ensuring transparency. REFACOP plays a crucial role as a key partner of AFUMA, supporting them in enhancing their organizational capacity through various activities. Therefore, the funds generated from the sale of W+ units can flow directly through REFACOP and channeled through AFUMA, the local association of women fish smokers in Manoka, to benefit the women fish smokers of Mankoa. This would require REFACOP to demonstrate collaborative processes of engaging with local communities in the development of strategic plan for benefit sharing.
- b) **Option 2:** Directly through AFUMA and facilitated by REFACOP. AFUMA operates under a strong governance framework with an elected president and active core members. All women fish smokers in Manoka are members of AFUMA. However, AFUMA has yet to complete its registration with the government authorities, which can be done easily with the support of REFACOP.



6. Analysis of W+ Results

6.1 Current Performance

The verification focused upon the Income and Assets domain.

Overall project score: +2

The score given takes into account a thorough verification of all the evidence that was provided to the verification team, including the interviews conducted with the women smokers and the project developers, and received feedback. This evidence supports the conclusion that the project has successfully achieved its immediate, intermediate and end outcomes (+2). However, risks associated with limited access to project resources to women residing in distant locations, due to limited project resources, could pose a greater risk if not addressed in the future. Therefore, the score remains at +2 due to these concerns.

W+ Domain	Desired Outcome	No Change (0)	Somewhat Better (+1)	Much Better (+2)	Very Much Better (+3)
Income & Assets	Increased income				X
	Increase in assets			X	
	Increased perception of well being			X	

6.2 Non-Permanence Risk Analysis

The verification team currently does not identify any major risks related to its continuity or sustainability of the project. However, the risks highlighted by the W+ monitoring report, confirmed by the verification team, regarding access for women residing in distant locations, must be addressed to prevent potential harm to the community in the future.



7. Verification (Audit) Conclusion

The project complies with the verification criteria for projects and their women's empowerment benefits as set out in W+ Standard and Program Guide. The verification team can confirm that the project has been implemented in accordance with the project description.

The total number of W+ credits achieved by the project during the verification period is 2007.

Women's Empowerment Benefits	W+ Credits generated Verification Period 1
• Significant increase in income reported (125.4% more compared to non-beneficiaries) • Income used to acquire assets (Savings of women beneficiaries increased from the additional income generated by the use of improved fish oven/stove.) • Women Smokers expressed increased recognition from local authorities and communities; increased decision making over the income earned.	Income and Asset W+ Credits 2007
Total	2007 W+ Credits



W+ Verification – Statement of Assurance

During the W+ Project verification, the verification team identified significant improvements in wellbeing and gender relations both within households and the community resulting from project participation. These changes have been well documented and referenced in the monitoring document. Specifically, the team focused on the impact of increased income on material wellbeing (including health, education, and assets) as well as on social status as intra-family relationships, decision-making processes, and community roles of the participating women.

Based on the extent of these identified changes and their potential sustainability, the verification team has determined the assurance level provided to the project “The Reducing the degradation of mangroves and other ecosystems through improved fish smokers and stoves” warrants a reasonable level of assurance.

Signed, 1 July 2024

Dibya Devi Gurung, Integrity Verifiers LLC

Reviewed, 3 July 2024

Barun Gurung
Integrity Verifiers LLC



APPENDIX 1: Consultation Schedule

Date	Subgroups	Proposed Consultation activity	Virtual/In person
7 th and 16 th June	Program Developer team	On line group meeting	Virtual – 3 participants
8 th June	Women project participants	In-person individual interviews	3 Participants, in-person
9 th June	Women project participants	In-person individual interviews	3 Participants, in person
10 th June	Women project participants	In-person individual interviews	3 Participants, in person
11 th June	Women project participants	In-person individual interviews	3 Participants, in person
12 th June		In-person individual interviews	3 Participants, in person
		Total 18 individuals	



APPENDIX 2: Field Report

Dahomey Users

	Mary Walé	GRACE JOLOMI	Pauline OLATUGA	Ruth MOTOWON	Vero Ilourimi	Ekole Rosalie Marimar
1. Marital status	Married	Married	Married	Married	Married	Cohabitation
2. How long have you used the improved oven?	2 years	1 year	4 years	4 years	3 years	4 years
3. Monthly income from dry fish during High season (Nov - March) FCFA	900 000	800 000	2 500 000	3 000 000	900 000	3 000 000
4. Monthly income from dry fish during low season (April-October)	500 000	100 000	1 100 000	950 000	500 000	1 500 000
5. Do you think your income has increased due to the use of the improved oven?	YES	YES	Not sure	YES	YES	Not sure YES
6. what was the increase in income from the sale of smoked fish last year?	Significant	Significant		More or less significant	Significant	
7. Are you a member of a savings group?	Yes	Yes	No	Yes	Yes	Yes
8. If yes, how much have you saved in these groups? Monthly	40 000	150 000		50 000	80 000	100 000
9. Do you think you have	YES	YES	YES	YES	Yes	YES



VERIFICATION REPORT | V1.5

W+ Standard

	Mary Walé	GRACE JOLOMI	Pauline OLATUGA	Ruth MOTOWON	Vero Ilourimi	Ekole Rosalie Marimar
saved time due to the new fish drying technology?						
10. How did you use the time saved?						
Children's education	Yes	Yes	Yes	Yes	Yes	
House cleaning	Yes	Yes	Yes	Yes	Yes	Yes
Field work		Yes			Yes	
Income-generating activities (small grocery)	Yes	Yes	Yes	Yes	Yes	Yes
Social activities		Yes				Yes (Church, meeting)
Recreational activities		Yes				No
Buying clothes		Yes				No
Buying jewelry		Yes				
Health					Yes	Yes
11. Did you have any problems participating in this project?	NO	NO	Yes It takes me a lot of time	Yes It takes me a lot of time	Yes the working time is enormous and takes up a lot of my energy	Yes (Transporting fish from the boat to the kitchen)
12. Did you have to sell your goods (jewelry, etc.) or take out credit to be able to pay the costs relating to this project?	NO	NO	NO	NO	NO	NO
13. Has the increase in income from the use of the improved oven created problems (emotional abuse,	NO	NO	NO	NO	NO	NO



	Mary Walé	GRACE JOLOMI	Pauline OLATUGA	Ruth MOTOWON	Vero Ilourimi	Ekole Rosalie Marimar
violence, social sanctions, marital conflicts)?						

Nyangadou Users

	BOUAMBE Aimée	TOMASCA Ogumoriti	ELKENA Marguerite	Oben Sera Priso
1. Marital status	Married	Single	Single	Married
2. How long have you used the improved oven?	4 years	1 year	2 years	4
3. Monthly income from dry fish during High season (Nov - March) FCFA	2 000 000	1 500 000	500 000	2 000 000
4. Monthly income from dry fish during low season (April-October)	500 000	700 000	300 000	1 000 000
5. Do you think your income has increased due to the use of the improved oven?	NO	No	I don't think	YES
6. what was the increase in income from the sale of smoked fish last year?				Significant
7. Are you a member of a savings group?	YES	No	YES	YES
8. If yes, how much have you saved in these groups? Monthly	100 000		15 000	100 000
9. Do you think you have saved time due to the new fish drying technology?				
10. How did you use the time saved?	YES		YES	YES
Children's education	YES	Yes	YES	Yes
House cleaning	YES	Yes	YES	YES
Field work	Yes	Yes		
Income-generating activities			Small grocery store	Selling spices
Social activities				
Recreational activities				
11. Did you have any problems participating in this project?	YES Takes a lot of time	No		NO



	BOUAMBE Aimée	TOMASCA Ogumoriti	ELKENA Marguerite	Oben Sera Priso
12. Did you have to sell your goods (jewelry, etc.) or take out credit to be able to pay the costs relating to this project?	NO	No	NO	NO
13. Has the increase in income from the use of the improved oven created problems (emotional abuse, violence, social sanctions, marital conflicts)?	NO	NO	NO	NO

Dahomey Non-Users

	JEANNETTE MOÏSE	STELLA
1. Marital status	Cohabitation	Married
2. How long have you used the improved oven?		
3. Monthly income from dry fish during High season (Nov - March) FCFA	500 000	500 000
4. Monthly income from dry fish during low season (April-October)	200 000	500 000
5. <i>Do you think your income has increased due to the use of the improved oven?</i>		
6. <i>what was the increase in income from the sale of smoked fish last year?</i>		
7. <i>Are you a member of a savings group?</i>	YES	NO
8. If yes, how much have you saved in these groups? Monthly		
9. Do you think you have saved time due to the new fish drying technology?		
10. How did you use the time saved?		
11. Did you have any problems participating in this project?		
12. Did you have to sell your goods (jewelry, etc.) or take out credit to be able to pay the costs relating to this project?		
13. Has the increase in income from the use of the improved oven created problems (emotional abuse, violence, social sanctions, marital conflicts)?		

Nyangadou Non-Users

	Esther BWALE	DIPOKO Célestine	Ruth ADEBAYOR
1. Marital status	Married	Married	Married
2. How long have you used the improved oven?			
3. Monthly income from dry fish during High season (Nov - March) FCFA	800 000	1 000 000	750 000
4. Monthly income from dry fish during low season (April-October)	350 000	500 000	200 000
5. <i>Do you think your income has increased due to the use of the improved oven?</i>			



6. What was the increase in income from the sale of smoked fish last year?			
7. Are you a member of a savings group?	No	Yes	No
8. If yes, how much have you saved in these groups? Monthly		250 000	
9. Do you think you have saved time due to the new fish drying technology?			
10. How did you use the time saved?			
11. Did you have any problems participating in this project?			
12. Did you have to sell your goods (jewelry, etc.) or take out credit to be able to pay the costs relating to this project?			
13. Has the increase in income from the use of the improved oven created problems (emotional abuse, violence, social sanctions, marital conflicts)?			



APPENDIX 3: List of women fish smokers interviewed in the field

Dahomey village						
SN.	Name	Marital status			Users	Non users
		Married	Cohabitation	Single		
1.	Mary Walé	X			X	
2.	Grace Jalomi	X			X	
3.	Pauline Olatuga	X			X	
4.	Ruth Motowon	X			X	
5.	Vero Llorimi	X			X	
6.	Ekole Rosalie Marimar		X		X	
7.	Jeannette Moise		X			X
8.	Stella	X				X
Nyangadou village						
9.	Bouambe Aimée	X			X	
10.	Tomasca Ogumoriti			X	X	
11.	Elkena Marguerite			X	X	
12.	Oben Sera Priso	X			X	
13.	Esther Bwale	X				X
14.	Dipoko Célestine	X				X
15.	Ruth Adebayor	X				X
Total		11	2	2	10	5

APPENDIX 4: Samples of field report in French

Dahomey Village – samples of data from non-users

DAHOMEY (non utilisateurs)

NOM: JEANNETTE MOISE
- statut matrimonial: concubin

Q: Quel est votre revenu mensuel issu de la vente de poisson fumé pendant la haute saison (nov - mars) au FCF?

R: 500 000 FCF

Q: Quel est votre revenu mensuel pendant la basse saison issu de la vente de poisson fumé (avril - octobre) au FCF?

R: 200 000 FCF

Q: Êtes-vous membre d'un groupe d'épargne?

R: OUI

DAHOMEY (non utilisateurs)

NOM: STELLA
- statut matrimonial: mariée

Q: Quel est votre revenu mensuel issu de la vente de poisson fumé pendant la haute saison (nov - mars)?

R: 500 000 FCF

Q: Quel est votre revenu mensuel pendant la basse saison issu de la vente de poisson fumé (avril - octobre)?

R: 200 000 FCF

Q: Êtes-vous membre d'un groupe d'épargne?

R: NON

Dahomey Village – samples of data from users

DAHOMEY (utilisateurs)

NOM: GRACE SOLOHI
- statut matrimonial: mariée

Q: Depuis quand avez-vous utilisé le four amélioré?

R: 2 ans

Q: Quel est votre revenu mensuel issu de la vente de poisson fumé pendant la haute saison (nov - mars) au FCF?

R: 500 000 FCF

Q: Quel est votre revenu mensuel pendant la basse saison issu de la vente de poisson fumé (avril - octobre) au FCF?

R: 200 000 FCF

Q: pensez-vous que votre revenu a augmenté du fait de l'utilisation du four amélioré?

R: oui, juste un peu

Q: si oui quelle est l'augmentation de revenu issu de la vente de poisson fumé par semaine?

R: significative

Q: Êtes-vous membre d'un groupe d'épargne?

R: oui, combien avez-vous épargné dans les groupes?

R: oui, j'ai épargné 150 000 FCF

Q: pensez-vous que vous avez gagné du temps en utilisant le four amélioré?

R: oui

Q: Comment avez-vous utilisé le gain de temps (qualitatif, investissement)?

R: j'ai payé l'école des enfants, arrangé la maison, les champs, j'ai acheté une épave, j'ai acheté du matériel, et le matériel.

DAHOMEY (utilisateurs)

NOM: PAULINE ELAVIGA
- statut matrimonial: mariée

Q: Depuis quand avez-vous utilisé le four amélioré?

R: 2 ans

Q: Quel est votre revenu mensuel issu de la vente de poisson fumé pendant la haute saison (nov - mars) au FCF?

R: 1 100 000 FCF

Q: Quel est votre revenu mensuel pendant la basse saison issu de la vente de poisson fumé (avril - octobre) au FCF?

R: 500 000 FCF

Q: pensez-vous que votre revenu a augmenté du fait de l'utilisation du four amélioré?

R: pas vraiment

Q: Êtes-vous membre d'un groupe d'épargne?

R: oui, combien avez-vous épargné dans les groupes?

R: je ne suis pas membre d'un groupe d'épargne

Q: pensez-vous que vous avez gagné du temps en utilisant le four amélioré?

R: oui

Q: comment avez-vous utilisé le gain de temps?

R: la scolarisation, l'école de la maison, le travail

Q: Avez-vous de problème en participant à ce projet?

R: oui, le travail est dur, et ça ne paie pas beaucoup de temps.

Q: Est-ce que vous avez dû vendre vos bijoux ou faire des emprunts pour pouvoir payer les frais de scolarité de vos enfants?

R: NON

Q: Est-ce que l'augmentation de revenu issu de l'utilisation du four amélioré a eu des effets (autres que financiers, sociaux, conflits, conflits sociaux, conflits)?

R: NON

Nyangadou Village – samples of data from non-users

Nom: RUTH ADEBAJOR NYANGADOU (Non utilisatrice)

Q: Statut matrimonial: MARIÉE

Q: quel est votre revenu mensuel issu de la vente de poisson fumés pendant la haute saison (nov.-mars)?

R: 750 000 FCFA

Q: quel est votre revenu mensuel pendant la basse saison issu de la vente de poissons fumés (Mars-octobre)?

R: 200 000 FCFA

Q: Est-ce que vous êtes membre d'un groupe d'épargne?

R: NON

Nom: DIPKO NYANGADOU (Non utilisatrice)

Q: Statut matrimonial: MARIÉE

Q: quel est votre revenu mensuel issu de la vente de poisson fumés pendant la haute saison (Nov.-mars)?

R: 1 000 000 FCFA

Q: quel est votre revenu mensuel pendant la basse saison issu de la vente de poisson fumés (Mars-oct.)?

R: 500 000 FCFA

Q: Êtes-vous membre d'un groupe d'épargne?

R: OUI

Q: si oui, combien avez-vous épargné dans les groupes?

R: 250 000 FCFA

Nyangadou Village – samples of data from users

Nom: ELKHA NYANGADOU (utilisatrice)

Q: Statut matrimonial: MARIÉE

Q: Depuis quand avez-vous utilisé le four amélioré?

R: 2 ans

Q: quel est votre revenu mensuel issu de la vente de poisson fumés pendant la haute saison (Nov.-mars)?

R: 800 000 FCFA

Q: quel est votre revenu mensuel pendant la basse saison issu de la vente de poisson fumés (mars-octobre)?

R: 300 000 FCFA

Q: pensez-vous que votre revenu a augmenté du fait de l'utilisation du four amélioré?

R: IL PEUT ÊTRE

Q: Est-ce que vous êtes membre d'un groupe d'épargne?

R: OUI

Q: si oui, combien avez-vous épargné dans les groupes?

R: 15 000 FCFA

Q: pensez-vous que vous avez gagné du temps en utilisant le four amélioré?

R: PLUS BEAUCOUP

Q: comment avez-vous utilisé le gain de temps?

R: Plus de temps pour la cuisson de poisson, moins de temps pour aller au four, plus de temps pour aller au marché, plus de temps pour aller au travail.

Q: Est-ce que vous avez été soulagé(e) par le gain de temps pour pouvoir payer les frais scolaires de vos enfants?

R: NON

Q: Est-ce que l'augmentation du revenu issu de la vente de poisson fumés a résolu des problèmes?

R: NON

Nom: ORIAN NYANGADOU (utilisatrice)

Q: Statut matrimonial: MARIÉE

Q: Depuis quand avez-vous utilisé le four amélioré?

R: 1 an

Q: quel est votre revenu mensuel issu de la vente de poisson fumés pendant la haute saison (Nov.-mars) en FCFA?

R: 2 000 000 FCFA

Q: quel est votre revenu mensuel pendant la basse saison issu de la vente de poisson fumés (mars-octobre) en FCFA?

R: 1 000 000 FCFA

Q: pensez-vous que votre revenu a augmenté du fait de l'utilisation du four amélioré?

R: OUI

Q: si oui, quelle est l'augmentation du revenu issu de la vente de poisson fumés par rapport à l'année dernière?

R: Significative

Q: Est-ce que vous êtes membre d'un groupe d'épargne?

R: OUI

Q: si oui, combien avez-vous épargné dans les groupes?

R: 10 000 FCFA

Q: comment avez-vous utilisé le gain de temps?

R: En allant au four, au marché, au travail, au projet.

Q: Est-ce que vous avez eu des problèmes en participant à ce projet?

R: AUCUN

Q: avez-vous de problèmes en participant à ce projet?

R: NON

Q: Est-ce que vous avez été soulagé(e) par le gain de temps pour pouvoir payer les frais scolaires de vos enfants?

R: NON

Q: Est-ce que l'augmentation du revenu issu de la vente de poisson fumés a résolu des problèmes?

R: NON