

VERIFICATION REPORT

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Report Title	Women's Time Savings from Biogas in NEPAL PROJECT VERIFICATION REPORT
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Summary

- The project complies with the output and outcomes established in the verification criteria.
- The Output Indicator for women's increased discretionary time scored a 3 and so is considered to be much improved. .
- The Immediate Outcome of reduced drudgery received a score of 1, and so considered to have somewhat improved.
- The Intermediate Outcome of increased sharing of workloads by men taking on work that is normally considered that of women scored 1, and so has improved somewhat.
- The aggregate score is 1.66, showing a Somewhat Improved status for 7200 women beneficiaries.
- Verified women's empowerment benefits in the above verification period amounted to 136 minutes

per day per woman of time saved.

The original verification report issued on 22/09/2014 was updated on 19/09/2018 to reflect the change in the number of W+ units generated by this project, due to the W+ Standard's change in the calculation of W+ units, as described below:

- The percentage of change between baseline and measurement is – 31.12 %, demonstrating a decrease in women's time spent on activities listed in the table above, as a result of the introduction of biogas.

1 W+ unit = 1 % change per woman. The number of W+ units generated is = number of women
 $\times 31.12 = 7200 \times 31.12 = \mathbf{224,064}$

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1 INTRODUCTION

1.1 Objective

This report is intended to verify the impacts derived from the implementation of the *Women's Time Savings from Biogas in Nepal* Project. The project is the application of the W+ on an existing biogas project in villages across 2 districts, enabling households to release time previously spent collecting fuel wood, cooking and other activities.

1.2 Scope and Criteria

The verification has been limited to consideration of the W+ time domain and has considered the following indicators:

Time	-3	-2	-1	0	1	2	3	
Desired Outcome	Much worse	Some -what worse	Worse	Same	Somewhat Improved	Improved	Much improved	Total Score
Reduced drudgery (immediate outcome)				Undertakes on a daily basis activities considered to be strenuous	Strenuous activities reduced by 20% as determined by beneficiaries	Strenuous activities decreased by 40% or more as determined by beneficiaries	Strenuous activities decreased by 60% or more as determined by beneficiaries	1
Increased discretionary time (Output)				No time for herself during the day	Rarely has some leisure time for herself during the day	Frequently has some leisure time for herself during the day	Always has some leisure time for herself during the day	3
Increased sharing of – men take on work that is normally				Men do not share any reproductive tasks (cooking,	Men share small number of reproductive tasks (cooking,	Men share moderate number of reproductive tasks (cooking,	Men share reproductive work (childcare, cooking, care for	1

considered that of women (Intermediate outcome)				childcare, care for sick and elderly)	childcare, care for sick and elderly)	childcare, care for sick and elderly)	sick and elderly)	
Increased perception of well-being (intermediate outcome)				No sense of positive health and emotional wellbeing				

1.3 Level of Assurance

The stakeholder engagement process evidences the indicated descriptors evidenced above. This is coupled with statistical analysis of numeric data gathered from stakeholder questionnaires, tested to a 98% confidence level.

1.4 Summary Description of the Project

WOCAN selected Nepal to implement the first W+ project in partnership with the Alternative Energy Promotion Centre (AEPC), South Pole Carbon, HIMAWANTI and AASTHA (two national level federations of women’s groups engaged in the forest and agriculture sectors). The project has been implemented with 7200 women who have been using biogas digesters distributed through the Biogas Distribution Program of AEPC in Kavre and Sindhuli districts.

The main objectives of the project are as follows:

- To quantify the time saved by women through the use of biogas using the W+ Time methodology and understand how women biogas have used the time saved;
- To test and refine the W+ Time methodology
- To identify mechanisms for revenue sharing with women beneficiaries
- To generate W+ Time units that can be sold, to provide a Proof of Concept for the W+ Program.

The secondary purpose of the project was to gather information that can be used to implement a Phase 2 W+ project designed to test and use other W+ domains, to capture the benefits provided through the time saved by biogas to measure benefits and generate units from the education, income/assets, health, leadership and food security domains.

2 VERIFICATION PROCESS

2.1 Method and Criteria

This verification report is limited to the consideration of the W+ Time domain.

Monitoring data has been gathered from field research and this data has been verified through the use of two approaches:

1. Random selection of stakeholder questionnaires to verify completion of the consultation process and accuracy of data
2. Site visits to verify:
 - The presence of biogas units and their operation
 - The experience of women and families using biogas units as reported by the women whose time has been saved

2.2 Document Review

The following documents were reviewed in order to complete the verification of the Time domain results for the *Women's Time Savings from Biogas in Nepal Project*:

- Method document for the Time domain
- Stakeholder questionnaires and associated electronic responses
- Statistical analysis of the electronic responses
- Monitoring Report

2.3 Interviews

A site visit took place on the 21st September 2014 to Phulbari, Kavre. During this visit two verification activities were carried out that directly engaged stakeholders:

1. A focus group with 12 women from the village; all of whom have been biogas unit users for up to 2 years
2. An interview with one of the men from the village, from a family using a biogas unit

Both activities were intended to validate and verify the findings presented in the monitoring report.

Focus Group:

12 women from the village attended the focus group. The conversation was facilitated by Dibya Gurung and Barun Gurung, both are experienced facilitators and familiar with this community. The focus group was structured around a series of questions devised by the verifier in order to elicit responses that could prove/disprove the findings of the Monitoring Report. These questions were arranged as higher level and supplementary questions to ensure flexibility for facilitators to gain the insights and reported experiences of the women:

- Who makes the decisions around how you spend money in your family? – **Higher level question**
- Do you believe that your family wellbeing is improved? – **Higher level question**
- What can you buy without consulting?
- What are the consequences of buying without consulting?
- Does your husband consult with you?
- What are you doing with your time?
- What would you like to be doing if you had more time?
- Do you believe your family well being is improved as a result of biogas unit usage?

2.4 Site Inspections

A site visit took place on the 21st September 2014 to inspect biogas units in Phulbari, Kavre and to speak to women and families that have been using this form of technology to release time previously used for fuel wood collection, cooking and other activities. During this visit biogas units installed were inspected and interviews took place with a women's group from the village as reported above and one male.

Included in the appendix is photographic evidence of the units on site.

2.5 Resolution of Findings

2.5.1 Forward Action Requests and Recommendations

1. Consider whether women would like to develop a Community Fund during the next year, that could be used to purchase new biogas units for non-users.
2. Monitor use of the biogas units for boiling water for water sanitation.

2.6 Eligibility for Validation Activities

During this verification during the Pilot Phase, the verification has been carried out with the auditor and the W+ Team.

3 VALIDATION FINDINGS

3.1 Participation under the W+ Program

The pilot project meets the eligibility criteria for the W+ program.

3.2 Methodology Deviations

There were no deviations from the W+ Time Method.

3.3 Project Description Deviations

There were no deviations from the Project description.

3.4 Grouped Project

No new activities have been added to the project during the delivery period covered by this validation and verification report.

3.5 Adding Domains

No new domains have been added to the project during the delivery period covered by this validation and verification report.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project has been implemented, monitoring and verification completed. There are no material discrepancies between the implementation and the project description or monitoring process.

4.2 Accuracy of Calculations of Women's Empowerment Benefits

The following time formula was used to determine the total amount of time saved by women through the adoption and use of bio gas technology.

$$QTTS(S) = W_{c,p} * P_{perf,c,p} * [\sum (TS_{coll,c,p} + TS_{cc,c,p} + TS_{subs,c,p}) - \sum (Tl_{wc,c,p} + Tl_{dca,c,p})]$$

Where:

TS(S) = Time saved by women during project operation, that will be used for additional activities for women (termed as quality time savings)

W_{c,n,p} = Number of women user/beneficiaries within a cluster of "like" projects within a verification period

P_{perf,c,p} = Project performance

TS_{coll,c,p} = Time saving as a result of reduced fuel collection times when project is operating as designed. Established by comparing time-use survey results of users vs. non-users within the same community and calibrated on a per-person basis.

TS_{cc,c,p} = Time saving as a result of reduction in cooking time and post-cooking clean-up times when project is operating as designed. Established by comparing time-use survey results of users vs. non-users within the same community and calibrated on a per-person basis.

TS_{sub,c,p} = Time saving as a result of substitution activities, such as activity shifting from women to men or time spend on project maintenance/technology application/training as result of project implementation and when project is operating as designed. Established by comparing Time User Survey results of Users Vs Non Users

TI_{wc,c,p} = Time increased in collection of water after biogas installation, when the project is operating as designed. Established by comparing Time User Survey results of Users vs Non-Users.

TI_{dca,c,p} = Time increased in collection of dung and application of manure after biogas installation, when the project in operating as designed. Established by comparing Time User Survey results of Users vs Non-Users

P_{perf} = % of biogas plant in operation * % of biogas usage per day

% of biogas plant in operation = Number of days biogas plant is in operation /365

% of biogas usage per day = Number of hours biogas is used for cooking/(total number hours for cooking cumulative of all stoves; biogas + Mud stove + Improved cookstove)

Results from the application of the W+ Time

Results from the application of the W+ Time method show that biogas technology has the greatest impact on women in terms of time savings. A survey questionnaire conducted with a sample size of bio gas users and non-users as comparison shows a net savings of 136 minutes or 2.26 hours of time saved for women who use biogas.

In terms of the total time savings generated for all the project beneficiaries, it differed for biogas users of less than 2 years and more than 2 years. For biogas users of less than 2 years, the total savings generated over this period amounts to 286,508,222 minutes or 4,775,135 hours. For biogas users of more than 2 years the total savings generated over this period amounts to 2,539,304,737 minutes or 423,217, 45.61 hours of time saved

The time savings for bio gas users occurred mainly for cooking for the family, cleaning utensils, water collection, firewood collection, and preparing organic manure from livestock. The percentage of change is calculated based on a comparison between women's time used per day on reproductive activities affected by the introduction of biogas. The percentage of change between baseline and measurement is – 31.12 %, demonstrating a decrease in women's time spent on activities listed in the table above, as a result of the introduction of biogas.

1 W+ unit = 1 % change per woman. The number of W+ units generated is = number of women x 31.12= 7200 x 31.12 = **224,064**

Quality Assurance/Quality Control Prior to the survey, enumerators were trained on how to collect the information. This allowed enumerators to identify and clarify any confusion that may have arisen during data collection. They were also trained to probe respondents that were reluctant to respond, or check responses that enumerators felt were under- or overestimated. They were asked to check the questionnaire every day in the evening. Data were entered into CSPro (Census Survey Processing: a software specialized for data entry, that minimizes data entry errors) by two data input personnel trained by a qualified statistician. The statistician provided oversight of data processing, and also tabulated the final results.

4.3 Quality of Evidence to Determine Women’s Empowerment Benefits

The evidence used to determine the women’s empowerment benefits are:

- Monitoring report
- Statistical analysis of questionnaire findings
- Interviews with stakeholders

The quality of the information gathered in the monitoring report is excellent and was obtained using local women trained as enumerators. These women were trusted by the community and able to readily engage with other women in the districts. As such the information is comprehensive and reliable.

Data from the questionnaires has then been inputted to a statistical analysis programme, the findings of this programme have been tested for rigour and a sample of the physical questionnaires examined to test for transposition errors. The process of converting data from written to electronic formats considered to be accurate and the information deduced from the data set is considered to be comprehensive and reliable.

The information gathered from the focus group and stakeholder interview is considered to be excellent in its reliability and rigour as it is source data from the women using the biogas units. Experts facilitated the sessions and each had considerable experience in ethnographic research techniques.

Overall the quality and quantity of evidence is considered to be appropriate and comprehensive; ensuring the voice of the person served is heard and that the data set gained during monitoring activity reflects the findings from stakeholders.

4.4 W+ RESULTS

4.4.1 Time

Output Indicators	Increased discretionary time
Situation	See below, under Outcome Indicators.

Justification	<p><i>Describe the steps taken to assess the current situation and score of this indicator. Provide an overall conclusion regarding the score.</i></p> <p>See below, under Outcome Indicators.</p>
Evidence	<p><i>List the evidence reviewed to assess the situation, scenario and score</i></p> <p>See below, under Outcome Indicators.</p>

Outcome Indicators	Reduced drudgery (immediate outcome)
Situation	<p>The two Village Development Committees (VDCs) selected for the application of the W+ standard are beneficiaries of a national program of the Alternative Energy Promotion Center (AEPC) that provides subsidized bio gas units. The AEPC works in all 75 districts of Nepal, and during the fiscal year 2012-13, subsidized the installation of 112 bio gas units in 62 districts.</p> <p>AEPC is a government institution established in 1996 with the objective of developing and promoting renewable/alternative energy technologies in Nepal. Presently, AEPC is under the Ministry of Science, Technology and Environment (MoSTE). It is working as a national focal agency of alternative/renewable energy in Nepal.</p> <p>AEPC's mission is to make renewable energy a mainstream resource through increased access, knowledge and adaptability contributing for the improved living conditions of people in Nepal</p> <p>AEPC's objectives are to:</p> <ul style="list-style-type: none"> • popularise and promote the use of alternative/ • renewable energy technology. • To raise the living standard of the rural people. • To protect the environment. • To develop the commercially viable alternative energy <p>industries in the country.</p>
Justification	<p>A focus group took place during a site visit on the 21/09/14. The questions used to initiate a discussion with the women's group from the village explored their sense of drudgery and time saved.</p> <p>It was clear from responses that the women felt a reduced sense of drudgery in that time had been saved by using the biogas unit rather than gathering fuel wood, and other activities, and this was seen to be a positive change by these women. However the time saved was then used for a variety of alternative activities some of which may be considered drudgery including:</p> <ul style="list-style-type: none"> • Increased time for growing/cultivating vegetables • Increased time for cooking

	<ul style="list-style-type: none"> • Increased time for water collection • Increased time to feed animals • Increased time for washing and cleaning <p>In addition the women explained that they had also used their increased available time for other activities that would not be considered drudgery including:</p> <ul style="list-style-type: none"> • Increased leisure time to watch TV • Increased time to study • Increased family time and increased conversation within the family <p>As a consequence it is considered that this outcome has been evidenced and the circumstances of women has somewhat improved and is scored as 1.</p>
Evidence	<p>Baseline Report Monitoring report Questionnaire for Users and Non-users Statistical analysis of questionnaire findings Interviews with stakeholders</p>

Outcome Indicators	Increased sharing – men take on work that is normally considered that of women (intermediate outcome).
Situation	<i>Describe the current situation as it is stated in the monitoring report</i>
Justification	<p>A focus group took place during a site visit on the 21/09/14. The questions used to initiate a discussion with the women’s group from the village explored their sense of shared activities, i.e. that men in the family took on part of the activities typically assumed to be the responsibility of women.</p> <p>The responses suggested mixed experience of this across the group with several women reporting that there was no change in the distribution of labour in their household, yet others reported that their husbands had become involved in cooking activity, as well as their sons.</p> <p>Additionally some women reported that their husbands were not able to participated in more household activities as they are undertaking their own work including:</p> <ul style="list-style-type: none"> • Taking milk to the dairy • Ploughing and cultivating crops • Cattle herding and livestock maintenance <p>It should be noted that those women reporting increased activity from their</p>

	<p>husbands were married to members of castes that are culturally believed to be progressive in their attitudes to gender equality including Tamang groups. However this is a subjective assumption and treated with caution.</p> <p>The women were also asked about decision-making within the family and the community in an attempt to establish if there is shared decision-making.</p> <p>The women reported that decisions about money that was earned directly by them were their own, however decisions about money generated by the family were shared decisions, when purchases were large for items such as land cattle, etc. However if smaller decisions were required about household items these were made by the women.</p> <p>It should be noted that no women have their own bank accounts; however they all contribute to a credit union/shared savings account that is managed in the village. This provided them with an opportunity to save funds for the family without informing their husbands or requiring permission.</p> <p>The women also reported that decisions made within the community were dependent upon the nature of the decisions – e.g. women secured funds to develop a new community centre and they have been able to lead decision-making on this. However issues around access to grass from the forest have been controlled by forest managers. This is sometimes men and sometimes women, but when forests are managed by women access is easy and when they are managed by men, men restrict the times that women can access the area.</p> <p>As a result it is considered that this outcome has been evidenced and the circumstances of women has improved and is scored as 1.</p>
Evidence	<p>Baseline Report</p> <p>Monitoring report</p> <p>Questionnaire for Users and Non-users</p> <p>Statistical analysis of questionnaire findings</p> <p>Interviews with stakeholders</p>

Outcome Indicators	Increased perception of family well-being (intermediate outcome)
Situation	<i>Describe the current situation as it is stated in the monitoring report</i>
Justification	A focus group took place during a site visit on the 21/09/14. The questions used to initiate a discussion with the women’s group from the village explored their sense of improved family wellbeing considering the instances of injustice

	<p>within the community.</p> <p>The women reported that decisions around funding specifically allocated to women's projects still remained primarily with men i.e. men decided the nature and frequency of activity and that men also determined whether their wives could attend such activities.</p> <p>Additionally the women reported injustices for disabled women who can be divorced by their husbands after ten years of living separately after marriage and widows, both groups are considered to be a burden to the family and despite some improvements around the perception of widows they are still disadvantaged.</p>
Evidence	<p>Baseline Report</p> <p>Monitoring report</p> <p>Questionnaires for Users and Non-users</p> <p>Statistical analysis of questionnaire findings</p> <p>Interviews with stakeholders</p>
Other Learning	<p>Furthermore whilst not directly related to this outcome or the time domain women also reported:</p> <ul style="list-style-type: none"> Increased participation in cooking by their sons who could confidently use the biogas unit safely Improved eye and respiratory health as a result of reduced smoke within the household <p>Whilst not directly related to this outcome or the time domain women also reported that the ease of use of the biogas unit means that their children no longer wait to be fed until they are back from their chores. Instead the children are able to feed themselves and currently it is still a novelty for the children to use the biogas unit to cook.</p>

4.5 ANALYSIS OF W+ RESULTS

4.5.1 Current Performance

Resource	Point -3	Point -2	Point -1	Point 0	Point 1	Point 2	Point 3	Average Score	Performance
Income/Assets									
Time					2		1	1.66	<i>Satisfactory</i>
Education/Knowledge									
Leadership									
Food Security									



Health									
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4.5.2 Historical Performance

As the first verification of this project there is no historical data for consideration.

Income/Assets	Point -3	Point -2	Point -1	Point 0	Point 1	Point 2	Point 3
				Score	Score	Score	Score
Historic Analysis:							
Time	Point -3	Point -2	Point -1	Point Zero	Point One	Point Two	Point Three
				Score	Score	Score	Score
Historic Analysis:							
Education/knowledge	Point -3	Point -2	Point -1	Point Zero	Point One	Point Two	Point Three
				Score	Score	Score	Score
Historic Analysis:							
Leadership	Point -3	Point -2	Point -1	Point Zero	Point One	Point Two	Point Three
				Score	Score	Score	Score
Historic Analysis:							
Food Security	Point -3	Point -2	Point -1	Point Zero	Point One	Point Two	Point Three
				Score	Score	Score	Score
Historic Analysis:							
Health	Point -3	Point -2	Point -1	Point Zero	Point One	Point Two	Point Three
				Score	Score	Score	Score
Historic Analysis:							

5 VERIFICATION CONCLUSION

W+ verification period: From **July 1st 2012 -June 30th 2014**. **The original verification report issued on 22/09/2014 was updated on 19/09/2018 to reflect the change in the number of W+ units generated by this project, due to the W+ Standard's change in the calculation of W+ units.**

The project complies with the output and outcomes established in the verification criteria.

Output: increased discretionary time (3)

Immediate Outcome: reduced drudgery (1)

Intermediate Outcome: increased sharing of – men taking on work that is normally considered that of women. (1)

The quantity of women's benefits has been established in the amount of discretionary time savings for women (see table below)

Verified women's empowerment benefits in the above verification period for time saved per woman per day.

Year	Baseline (minutes/day/woman)	Project benefits (minutes/day/woman)	Net women's empowerment benefits (minutes/day/woman)
2014	437	301	136

The time savings for bio gas users occurred mainly for cooking for the family, cleaning utensils, water collection, firewood collection, and preparing organic manure from livestock. The percentage of change is calculated based on a comparison between women's time used per day on reproductive activities affected by the introduction of biogas. The percentage of change between baseline and measurement is – 31.12 %, demonstrating a decrease in women's time spent on activities listed in the table above, as a result of the introduction of biogas.

1 W+ UNIT = 1 % CHANGE PER WOMAN. THE NUMBER OF W+ UNITS GENERATED IS = NUMBER OF WOMEN X 31.12= 7200 X 31.12 = 224,064



Liz Allen
19th September 2018

ANNEX: PHOTOS OF VERIFICATION FIELD VISIT

