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MONITORING REPORT

ACWA POWER SOLAFRICA BOKPOORT CSP PROJECT

W+ TIME SAVINGS; KNOWLEDGE & EDUCATION; AND FOOD SECURITY REPORT

Project Title	<i>Acwa Power Solfrica Bokpoort CSP Project</i>
Project Start Date	<i>01/07/17</i>
Project End Date	<i>31/01/18</i>
Monitoring Report number	<i>01</i>
Date of Report	<i>10-10-2020</i>
Project ID	<i>004-2019</i>
Monitoring Period	<i>01-07/17 – 31/01/18</i>
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Summary of Results:

This first Monitoring Report records the following results:

1. **W+ Time : 85 women experienced a 93% change from a time savings, generating 7905 W+ Time Units.**
2. **W+ Knowledge & Education: 2083 women experienced a 41% change, generating 85,403 W+ Knowledge and Education Units**
3. **Food Security: 40 women experienced a 6% change, generating 240 W+ Food Security units**

1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

WOCAN was commissioned by ACWA Power to apply the W+ Standard and measure the results of the ACWA SolaAfrica Bokpoort CSP Project on women's empowerment in the Northern Cape of South Africa.

This report contains the measurement of time -savings by women as a result of the Opwag Water Supply installation for 85 women and their households.

The Bokpoort Project is a 50MW Concentrated Solar Power (CSP) farm located near the town of Groblershoop, 120 km South East of Upington (the nearest airport) in the Northern Cape Province, that is being developed by Acwapower. An obligation imposed by the South African government is that the Project contribute to the area's Enterprise Development (EnD) and Socio-Economic Development (SED).

The Northern Cape is the largest province in the country, having 30 % of its land mass, but the smallest population (2.2% or 1.14m) of the country. ACWA Power initiated the Bokpoort CSP program in January 2014 in fulfillment of Bokpoort CSP's Economic Development Obligations for communities within a 50 km. radius of the solar plant, in the !Kheis Municipality. This is predominantly a rural area, consisting of six towns and 1 settlement: Groblershoop, Wegdraai, Topline, Grootdrink, Boegoeberg, Gariiep and Opwag. Groblershoop is the main town.

The area suffers from low levels of employment and education, as well as water shortages, and health and social problems, which limit women's empowerment.

ACWA Power has initiated and conducted numerous and diverse activities to address these issues since 2014. Key activities are:



- Supply of clean water and solar lighting (for time saving and health)
- Formal education support (Learners and Apprentices) for education and employment
- Business development through training and finance (for employment)

It was necessary to exclude from this W+ measurement some of the activities that had very low numbers of beneficiaries, or for which adequate descriptions of the activities and numbers of beneficiaries were not available. Some of the activities were also conducted prior to the allowable crediting period of the W+ Standard.

The eligible activities, therefore, fall under three W+ domains: (1) Knowledge & Education, (2) Time and (3) Food Security. The activities associated with these domains that are generating significant results for women’s empowerment.

This first Monitoring Report records the following results:

1. **W+ Time : 85 women experienced a 93% change from a time savings, generating 7905 W+ Time Units.**
2. **W+ Knowledge & Education: 2083 women experienced a 41% change, generating 85,403 W+ Knowledge and Education Units**
3. **Food Security: 40 women experienced a 6% change, generating 240 W+ Food Security units**

1.2 Project Sectors and Types

Activity	W+ Domains	Sector
Opwag Water Project: reducing women’s collection time and improving health through drinking water access and vegetable gardens	<u>Time</u>	<ul style="list-style-type: none"> ○ Public Health ○ Food security
LoveLife: training and support for youth leadership; knowledge and reduction of gender-based violence, substance abuse and teenage pregnancies	<u>Knowledge & Education</u>	<ul style="list-style-type: none"> ○ Public Health ○ Youth ○ Education

Soup Kitchens for feeding the hungry	<u>Food</u> <u>Security</u>	<input type="radio"/> Public health <input type="radio"/> Food security
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1.3 Project Developer

Organization name	ACWA Power Solafrica Bokpoort CSP Power Plant (PTY) LTD (RF)
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1.4 Other Entities Involved in the Project

Organization name	LoveLife Trust
Role in the project	Implementer of the LoveLife Programme
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Organization name	LoveLife Trust
Role in the project	Implementer of the LoveLife Programme



Contact person	Carlo Isaacs
Title	Projects Coordinator
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1.5 Project Start Date

W+ Activity	Start date
Opwag Water Supply	01/07/17
LoveLife: Youth Centre	04/12/18
LoveLife: Volunteers	01/01/16
Soup Kitchens	01/06/16

1.6 Project Crediting Period

The Crediting Period for this W+ Measurement is from 1 January 2018 to 1 January 2020.

<i>W+ Domains and title of related project activity</i>	<i>Start date</i>	<i>End Date</i>	<i>Crediting Period: Total Years/Months</i>	<i>Any Associated Standard (e.g. CDM, VCS)</i>
<u>Time</u> Opwag Water Project	01/07/17	31/01/18	1 month	NA
<u>Knowledge & Education</u> LoveLife Youth Centre	04/12/18	31/12/38	1 year 10 months	NA
<u>Food Security</u> Soup Kitchens	01/06/16	ongoing	2 years	NA

1.7 Project Location

1.7.1. Opwag Water Reticulation Project

This water project was implemented in July 2017, following the successful water reticulation programme that was implemented in Topline, a nearby area. Opwag is a rural village within the !Kheis Local Municipality (KLM) that did not have access to clean, piped water. This project will allow for access to potable water through the design and implementation of a water reticulation system that will be integrated into the municipality feed, using local labor and skills. The project supplied a water treatment plant and pipeline with tap installations to 85 homes, to supply them with clean drinking water.

Prior to the implementation of this project the women of the community would walk to the canal more than 5 km to collect water. This would happen every day with around three trips per day, for a half hour each trip. The community had limited drinking water and were unable to grow vegetables for personal consumption. Both of these constraints impact the health of this very poor community. The objective of the project was to provide consistent and easily accessible water to the community. This was achieved by improving and increasing the reticulation of the water which allows each home to access water on their property. This ensured time saving by the women of the community and health benefits from the production of vegetables.

1.7.2 LoveLife Youth Centre

New LoveLife Trust also known as LoveLife, is South Africa's youth non-governmental organisation established in 1999 as a joint initiative of leading South African NGOs, private foundations and the South African government. Initially it was established with a mandate to reduce new HIV infections and unplanned pregnancies among young people aged 15-24 years by half within a five year period. As the organisation has grown, focus is on promotion of youth health in all other aspects with an intended outcome to influence positive social behaviour change amongst young people. The main target group has also been extended to target age group from 10 – 24 years. Half of its beneficiaries are female.

The LoveLife project for the communities of KLM commenced in January 2016. It was identified as a need of all of the communities during the community engagement sessions. Potential impact areas pertained to the changing of behavior and knowledge of youth through training and campaigns to reduce the incidences of substance abuse, gender-based violence, and teen pregnancies, and improve the health and well-being of youth. The organisation's implementation pillars focus on individual, societal and structural drivers of high-risk behaviour among youth through integrated multimedia messaging, community-



level outreach programmes as well as clinical and psychosocial services. Since young people are inspired by their peers and listen to what they have to say, LoveLife's positive lifestyle and healthy sexuality programmes are implemented by a national corps of youth volunteers known as groundBREAKERS (highly motivated peer motivators and community mobilisers between the ages of 18 and 25 years) and mpintshi's (younger volunteers who shadow groundBREAKERS).

With support from ACWA Power, Lovelife built a Y-Centre from where it conducts its trainings and campaigns for young males and females from the KLM. The Centre is a vibrant, educational yet recreational multipurpose outreach centre where young people access a range of LoveLife programs including computer and work-related training, performing arts, sports, sexual and reproductive health, information and services, life skills, motivational programmes, the promotion of health and fitness, debating leagues, radio production and broadcasting skills development. Programmes are run under the management of the Y-Centre Coordinators with the support of groundBREAKERS and mpintshi's. They offer recreational hubs for young people growing up in areas where there are limited facilities as well as a safe after school environment.

Three activities are of special relevance for women's empowerment:

- 1) campaigns to reduce gender-based violence and reduce teen pregnancies,
- 2) use of young women as peer-to-peer educators and
- 3) 'Go to Work' skills development training. The Annual Report 2017 states that on average, 65% of each year's cohort of groundBREAKERS go on to find employment or study further and almost 85% report increased health-seeking behaviour due to participation in the programme (https://lovelife.org.za/en/wp-content/uploads/2018/10/loveLife-Annual-Report-2017_Final.pdf).

1.7.3 Soup Kitchens

Soup kitchens commenced in 01/06/16. Three community kitchens have been established to provide meals to needy members of the communities. Facilitators of the feeding groups described how women of the community benefitted not only from food provided for their children and themselves, but also from their guidance and help for their problems of substance abuse and gender-based violence.

1.8 Project's Activities Boundary and Scope

Activity	Scope	Target
Opwag Water Supply	Opwag	Women of every household in Opwag (85)
LoveLife Youth Centre	KLM	1319 young females and 1484 adult females = 2803 total
Soup Kitchens	Boegoeberg, Wegdraai and Sternham	40 Women
Not included in this measurement:		
SMME Incubators	Business community of KLM	40 SMMEs (80% are women-owned)
Bursaries	Tertiary learners of KLM	Unknown number of female tertiary learners
Apprenticeship	Tertiary learners of KLM	Unknown number of Female tertiary learners of KLM
Learner transport Project	Grootdrink and Gariep	Unknown number of Female students in Grade 10-12
Mathematics and Physical Science Tutor	KLM	Unknown number of Female learners from grade 4 – 12
BBBEE Farmers	KLM	6 Black female emerging farmers

1.9 Conditions Prior to the Project's Initiation of Activities

Project Activity	Conditions
Opwag Water Project	<ul style="list-style-type: none"> ○ Opwag Households had no access to piped water, either inside dwellings or on communal stand. They were included in the 4.3% of households in the Siyanda District Municipality (SDM) with no access. ○ Water collection in South Africa– if the distance was more than 1 km – was about 75 minutes per day ○ Women spent 3 hours and 15 minutes per day on household chores (in South Africa) ○ In the Northern Cape women spent 224 minutes per day, on non-production activities (e.g. collecting water, cooking, cleaning, etc.)
LoveLife Training: Youth Volunteers and Youth Centre	<ul style="list-style-type: none"> ○ Between April and May 2015 there were: <ul style="list-style-type: none"> ▪ 13 cases of violence against women ▪ 5 cases of violence against children ▪ 263 cases related to substance abuse ○ 20% of teenagers in the Northern Cape, between the ages of 15 to 19, have begun childbearing ○ 36% of patients admitted to rehabilitation and treatment centres for substance abuse were aged between 10 and 19
SMME Incubator and BBBEE Farmers	<ul style="list-style-type: none"> ○ Women headed households are at 35.7% in 2011 ○ The average household income for the SDM is R 92,878 ○ The dependency ratios for the SDM is 50.5% in 2011 ○ The unemployment rate for the SDM is 21% in 2011
Bursaries, Mathematics and Physical Science	<ul style="list-style-type: none"> ○ The education levels of the SDM: <ul style="list-style-type: none"> ▪ Those with no education = 9.6% in 2011 ▪ Those completing grade 12 = 21.7% 2011 ○ The percentage entering higher levels of learning = 6.4%

1.8 Title and Reference of W+ Methods

Domains that were employed include:

- Time Savings
- Knowledge & Education
- Food Security



2 IMPLEMENTATION STATUS

2.1 Implementation Status of Project Activities

Two activities of the Project were completed prior to this crediting period and so **cannot be included in this measurement**. They are described here for background information:

(1) Opwag Solar Lighting Project

The Solar Lighting Project was implemented for the community of Opwag, from September 2013 to June 2015. This rural village is situated on mountainous terrain and hence not able to be connected to the power grid. The occurrence of high winds coupled with reed homes and the use of candles led to many injuries as well as loss of assets. With access to electricity, households were unable to charge cell phones, which then impacted on their accessing to urgent medical assistance.

The community utilized wood and gas for cooking and heating. The women of the community spent approximately thirty minutes collecting wood per day. The lack of electricity also impacted on the duration that children could study and also limited the access to information. The Solar Lighting project led to time savings for the women of the community by reducing the need to collect wood, amongst other impacts. The community has indicated that there has been an increase in the consumption of news with the access to television and radios provided, and linked, to the solar lighting project. They have also indicated that there have been cost savings as they purchased fewer candles due to the solar lighting project.

(2) Sanitary Towel Supply Project

During the Women's Month of August 2017, the Project provided sanitary towels to approximately 30 female students from the Groblershoop Hoerskool. One of the objectives of this project was to ensure that girls do not resort to unsafe measures to manage their menstrual cycle and to ensure that girls do not have their education impeded due to the lack of sanitary towels. The Bokpoort Project also intends to establish a sanitary towel manufacturing business within KLM.

Other activities are described below that were not deemed eligible, as insufficient information existed to demonstrate results to specified numbers of women. These **cannot be included in this crediting period, though it is recommended they be considered for future W+ crediting periods**.

- SMMEs Incubator



The purpose of this Incubator is to create a thriving local economy through a multitude of local businesses that will ensure a greater flow of benefits, to serve both the community and the Project itself. It is envisaged that many of the developed businesses will be contracted to provide goods and services for the operation of the solar plant. 40 of the SMMEs (80%) are to be women-owned. A further purpose of the Incubator is to develop businesses owned by Black people, which will have the effect of empowering previously disadvantaged people as well as circulating funds within the community. This initiative aims to develop skills and put in place the structures that any business needs to survive, including the following:

- Mentorship and advice by highly skilled professionals;
- Market readiness and capacity development;
- Workshops for personal and business development;
- Bookkeeping services;
- Networking workshops;
- Sector specific training that will develop training programs for all employees.

- **BBBEE Farming Initiative**

This project was initiated during July 2017, after its identification during the due diligence phase of the Bokpoort Project. This project is aligned with the national farming agenda. The Project has identified abundant agricultural opportunities surrounding the Project Site. Most notable is the production of table grapes. This has presented the Project with the opportunity to develop the farming potential of the area and to empower previously disadvantaged people. The Project is seeking to maximise agriculture value chains by exploiting this local resource. Further, it will provide financial and non-financial support in the form of capital and support. The support includes the transfer of skills in the form of Human Resource (HR) functions, accounting functions and workshops in order to build networks and improve the stock of knowledge. Six female farmers are included in this group of beneficiaries.

- **Apprenticeship**

The purpose of this programme has been to expose people to skillsets including Environmental, Health and Safety, First Aid, Fire Fighting, Electrical and Mechanical courses. It is fully intended that these beneficiaries will be Black people and that once they complete their apprenticeship, they will be able to get practical experience working at the CSP plant. This is in line with community engagements whereby it was identified that there is a lack of education and skills in the local community. The Project Company will be training ten apprentices a year for two years each. This program will ensure that there is consistent growth in skills which, while primarily may be focused towards working for the Operations



Contractor, may also be used as the SMME Incubator progresses and more small businesses are created in the local community.

- **Bursaries**

The purpose of these bursaries is to provide students with an opportunity to study further. Female tertiary learners are included in this group of beneficiaries. Specifically, these bursaries are aimed at students who would be unable to do so without aid. These bursaries are intended to enhance access to the economy by Black people. This programme is in line with the Project Company's strategy (according to community engagements, research and the Integrated Development Plan (IDP) to improve the state of education in the community.

- **Mathematics and Physical Science Tutor**

As part of the Project Company's dedication to improve the state of education in the local community, a math and physical science tutor is provided to students, including females, in grades 4 -12.

- **Learner Transport Project**

Transport is provided to students in Grades 10-12, in the towns of Grootdrink and Gariep. This is to save the time of students from having to walk to school, in the expectation that they will spend more time studying and will receive higher grades. There is a danger that girls' extra time will translate into greater time spent on chores rather than studying.

2.2 Where applicable, describe how non-double counting measures are being implemented.

This was a one time application of the W+ Time Savings Domain

2.3 Where applicable, describe how non-permanence risk factors are being monitored and managed.

NA

2.4 Methodology Deviations

The W+ Time formula based on Time Saved minus the Time Spent through work or activities that result from the technology intervention did not apply wholly. Time saved through the installation of piped water was measured, whereas, the Time Spent did not apply in this particular case.

2.5 Project Description Deviations

NA

3 DATA AND PARAMETERS

3.1 Data and Parameters Available

NA

3.2 Data and Parameters Monitored

Indicator	<i>Time savings</i>
Data unit(s)	<i>Hours of time saved and discretionary time available</i>
Description	<i>Time saved was determined by the amount of time spent on fetching water previous to the intervention plus the additional time saved in cooking, cleaning etc due to water availability in the house.</i>
Source of data	<i>Women interviews</i>
Description of methods to collect information and procedures to be applied	<i>Survey conducted using questionnaires</i>
Purpose of the data	NA
Comments	NA

Indicator	<i>Knowledge & Education</i>
Data unit(s)	<i>Retained and applied knowledge and skills acquired from trainings</i>
Description	<i>The levels of confidence in knowledge retention post-training and the formal and informal application of the knowledge/skill for trained</i>

	<i>individuals and communicating these to family, friends etc.</i>
Source of data	<i>Women interviews</i>
Description of methods to collect information and procedures to be applied	<i>Survey conducted using questionnaires</i>
Purpose of the data	NA
Comments	NA

Indicator	<i>Food Security</i>
Data unit(s)	<i>Increased food sourcing option for women</i>
Description	<i>Food insecure women and households utilize various food sourcing options, and food banks provide an increased food sourcing options</i>
Source of data	<i>Women interviews</i>
Description of methods to collect information and procedures to be applied	<i>Survey conducted using questionnaires</i>
Purpose of the data	NA
Comments	NA

3.3 Monitoring

<i>W+ DOMAIN</i>	<i>Data monitored</i>	<i>W+ MEASUREMENT ACTIVITIES</i>	<i>TIMELINE of MEASUREMENT ACTIVITIES</i>	<i>RESPONSIBLE for MEASUREMENT ACTIVITIES</i>



<i>Time</i>	- <i>Hours of time saved</i> - <i>Increased discretionary time</i>	<i>Baseline and Results Survey</i>	<i>March 2020</i>	<i>Sikalazo Dube</i>
<i>Knowledge & Education</i>	- <i>Retained and applied knowledge and skills acquired during trainings</i>	<i>Baseline and Results Survey</i>	<i>March 2020</i>	<i>Sikalazo Dube</i>
<i>Food Security</i>	- <i>Increased food sourcing option for women</i>	<i>Baseline and Results Survey</i>	<i>March 2020</i>	<i>Sikalazo Dube</i>
		<i>Results Report</i>	<i>April-October 2020</i>	<i>Jeannette Gurung</i>

Approach: The survey questionnaires developed for the three W+ methods were adapted for use in relation to these project activities and context, and used to collect survey data for Time savings. A baseline survey was conducted in early March, 2020 with women who did **not** benefit from the project’s activities (control group) and with women who **have** benefited from the project’s activities in order to measure the increase in women’s empowerment as per the three domains of the W+.

The WOCAN consultant trained and supervised about 10 women from the LoveLife volunteers in the process of measurement and use of the survey questionnaires to collect data for the baseline and results for all of the activities within the project.

The final sample size using this method is as follows for the following W+ Domains

Time

Sample size calculation	
Population size =	85
Assumed proportion	0.10
Level of acceptable error	10%

Confidence level	90%
Required Sample Size	20
Additional sample collected	1
Total sample HHs	21

A total of 21 samples were selected for interviews, of which 11 were project participants, and 10 were non-participants. In the first stage enumeration area was selected purposively where the project Opwag Water Project (Zuma Village) has conducted interventions and a similar locality nearby as non-intervention area. In the second stage households were selected randomly using systematic random sampling method.

Knowledge & Education

The final sample size using this method is as follows.

Sample size calculation	
Population size =	2083
Assumed proportion	0.25
Level of acceptable error	10%
Confidence level	90%
Required Sample Size	50
Additional sample collected	9
Total sample HHs	59

This study collected a total of 59 samples: 36 from project intervention area and 23 from non-project intervention area. In the first stage enumeration area was selected purposively where the project was exposed to Lovelife (Goal2Work Training) intervention. In the second stage households were selected randomly using systematic random sampling method.

Food Security

The final sample size using this method is as follows.

Sample size calculation	
Population size =	40
Assumed proportion	0.25
Level of acceptable error	10%
Confidence level	90%
Required Sample Size	23
Additional sample collected	4
Total sample HHs	27

The study collected a total 27 samples of which 18 from project intervention area and 9 from non-project intervention area. In the first stage enumeration area is selected purposively where the project Soup Kitchen has intervened and a similar locality nearby as non-intervention area. . In the second stage households were selected randomly using systematic random sampling method.

Do No Harm

The Do no harm questionnaire was administered with the project beneficiaries. A total of two individuals (18.2%) reported in the affirmative, while 9 individuals (81.8%) reported in the negative.

Time: Has any household member suffered from a water related accident in last 1year.

	User	
	n	%
Yes	2	18.2
No	9	81.8

4 W+ RESULTS

4.1 Results

W+ Domain	<i>Time</i>
Indicator	Hours of time saved Increased discretionary time available
Description	Time saved was determined by the amount of time spent on fetching water previous to the intervention plus the additional time saved in cooking, cleaning etc. due to water availability in the house
Situation	The water supply project ended in 2018 after 85 households were provided with piped water
Prospects	Recommend additional activities such as leadership trainings to ensure that saved time for women have options to use discretionary time for other activities beyond conducting household chores, and thereby potentially compounding their time poverty.



W+ Domain	Knowledge & Education
Indicator	Retained and applied knowledge and skills acquired from trainings
Description	The levels of confidence in knowledge retention post-training and the formal and informal application of the knowledge/skill for trained individuals and communicating these to family, friends etc.
Situation	The trainings for skills development is ongoing and estimated to end on 31/12/38
Prospects	Additional skills such as women’s leadership, communication and networking are recommended. Such additional skills would contribute significantly to growing their technical knowledge and make the trainees more marketable.

W+ Domain	Food Security
Indicator	Increased food sourcing option for women
Description	Food insecure women and households utilize various food sourcing options, and food banks provide an increased food sourcing options
Situation	Soup kitchens commenced in 01/06/16. Three community kitchens have been established to provide meals to needy members of the communities. Facilitators of the feeding groups described how women of the community benefitted not only from food provided for their children and themselves, but also from their guidance and help for their problems of substance abuse and gender-based violence.
Prospects	A food security assessment should be conducted to determine food insecurity through an understanding of structural and other challenges such as food habits, limited income opportunities, access to services etc. that inhibit food sourcing. Additionally, the role of women and men in food sourcing in times of food insecurity would provide an important window of understanding to the effective design of potential interventions in the future.

4.2 Summary Analysis of Results

4.2.1. Current Performance

Water Project

The water project was implemented in July 2017 and following the successful installation of piped water to 85 households was concluded in 2018. The water project has generated considerable time -savings for women. However, most of the saved time has been plowed back into conducting household chores, with little or no significant change in existing asymmetrical gender roles. Additional interventions for women and men, particularly in leadership skills could go a long way in ensuring that time savings for women are 'opportunities' for women to improve their existing situations.

LoveLife Skill Building Project

The training interventions provided by LoveLife commenced in January 2016 and aims to enhance behavioral change and knowledge enhancement to reduce incidences of substance abuse, gender-based violence, teen pregnancies, improved health and well being of youth.

With support from ACWA Power, Lovelife built a Y-Centre from where it conducts its trainings and campaigns for young males and females from the KLM. The Centre is a vibrant, educational yet recreational multipurpose outreach centre where young people access a range of LoveLife programs including computer and work-related training, performing arts, sports, sexual and reproductive health, information and services, life skills, motivational programmes, the promotion of health and fitness, debating leagues, radio production and broadcasting skills development. Programmes are run under the management of the Y-Centre Coordinators with the support of groundBREAKERS and mpintshi's. They offer recreational hubs for young people growing up in areas where there are limited facilities as well as a safe after school environment.

Three activities have contributed significantly to women's empowerment:

- 1) Campaigns to reduce gender-based violence and reduce teen pregnancies,
- 2) Use of young women as peer-to-peer educators and
- 3) 'Go to Work' skills development training.

Soup Kitchens

Soup kitchens commenced in 01/06/16. Three community kitchens have been established to provide meals to needy members of the communities. Facilitators of the feeding groups



described how women of the community benefitted not only from food provided for their children and themselves, but also from their guidance and help for their problems of substance abuse and gender-based violence.

4.2.2. Calculation of the number of W+ units

Time Savings Domain

$$TS(S) = Wc,p * Pperf c,p * [\text{sum} (TS coll, c,p + TSc c,p + TS subs c,p) - \text{sum} (TI wc c,p + TIdca c,p + TSoes)]$$

Pperf c,p	0.96	At least 2 times in a day devote to water collection and use (Lunch, and dinner)
TS coll	2	Time saving as a result of reduced water 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.
TSc c,p	1	Time saving as a result of reduction in cooking time and post-cooking clean-up times, and washing clothes and self
TS subs c,p	3	Time saved from installation of water is substituted for other activities
TI wc c,p	0	Time increased after installation of water is assumed to be zero as no extra time is offered because of it
TIdca c,p	0	Time increased after installation of water is assumed to be zero as no extra time is offered because of it
TSoes	0	Assumed zero as no substitution time devoted after installing water
TS(S)	475	Total time saved calculated using the formula
Wc,p	85	Total women benefitted

Percentage difference among beneficiaries among project intervention area and non-project intervention area = 93%

Therefore W+ Time Units = Total beneficiary * percentage change = 85*93= 7905 Units

W+ Unit Calculation

Average time saved by User HHs (in Minutes) (TTs-TTsnu)	164
Percentage Change	93%
Total beneficiaries (Wc,p)	85
Total W+ units	7905

Knowledge and Education Domain



W+ is calculated using the formula

$$KG (K) = WL * [Sum A (a1+a2+a3+a4+a5+.....+....+an) + Sum B (b1+ b2+....+....+ bn)] - [Sum C (c1+c2+c3+c4+.....+....+...+ cn)]$$

Table: W+ calculation sheet

Beneficiary type	Average knowledge score (A)	Average challenges score (B)	Knowledge (KG) (A-B)
User	12.22	1.28	10.94
Non User	9.04	1.30	7.74

Percentage difference among beneficiaries among project intervention area and non-project intervention area = 41%

Therefore W+ Knowledge & Education Units = Total beneficiary * percentage change = 2083*41= 85,403 Units

Food Security Domain

The total impact of food security on women’s empowerment is calculated by the sum of the total difference between Structural Limits to Access to Food (A), minus the sum of Women’s Navigation Strategies (B), plus the sum of knowledge of the Health Dimensions of food security (C) multiplied by the number of women (WL) in the project area households, within a cluster of “like” projects within a verification period.

$$FSL = Sum of \{ [A] - [(b1+b2+b3+b4) - (b5+b6+b7+b8)] + [(c1+c2+c3+c4) - (c5+c6+c7+c8)] \}$$

FSL = Food Security Impact

WL= Number of women targeted by the intervention = 40 (for this project)

Table: W+ average per unit

Intervention type	Average W+ score	Std. Dev.	Freq.
Intervention HH	18.72	2.76	18.00
Non-intervention HHs	17.67	3.91	9.00
Total	18.37	3.15	27.00

Percentage difference among beneficiaries among project intervention area and non-project intervention area = 6%

Therefore W+ Food Security Units = Total beneficiary * percentage change = 40*6= 240 units

Signature(s) of Preparer(s)

This W+ Monitoring Report was prepared by:



Jeannette Gurung	Ex. Director	WOCAN	15 Oct. 2020
Name	Title	Organization	Date

Signature

APPENDIX 1: TIME DATA

1 METHODOLOGY

1.1 Sample size

Sample size was calculated in compliance with the general guidance on sampling, as found in Guidelines for sampling and surveys for CDM project activities and program of activities.

http://cdm.unfccc.int/Reference/Guidclarif/meth/meth_guid48.pdf.

The final sample size using this method is as follows.

Sample size calculation	
Population size =	85
Assumed proportion	0.10
Level of acceptable error	10%
Confidence level	90%
Required Sample Size	20
Additional sample collected	1
Total sample HHs	21

A total of 21 samples were selected for interviews, of which 11 were project participants, and 10 were non-participants. In the first stage enumeration area was selected purposively where the project Opwag Water Project (Zuma Village) has conducted interventions and a similar locality nearby as non-intervention area. In the second stage households were selected randomly using systematic random sampling method.

1.1.1 The Time Formula

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

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



Where,

TS(S) = Time saved by women during project operation, that will be used for additional activities for women.

Wc,n,p = Number of women user/beneficiaries within a cluster of “like” projects within a verification period

Pperf,c,p = Project performance

TScoll,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.

TScc,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.

TSsub,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 (note: if there is no shift of work then TS Sub can be taken as 0)

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.

Tldca 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

1.1.2 Data collection and analysis

Data was collected using a paper based survey. After survey the data was entered into the mobile data collection application called ODK. Data analysis was done using STATA 13.0. A one day training was provided to the data collection enumerators before data collection.

2 RESULTS

2.1 General Information

The respondents of the survey for the Opwag Water Project in Zuma Village was limited to a relatively small sample size, consisting of 11 individuals who were project beneficiaries, and 10 individuals from a nearby village who were not beneficiaries of the project.

In the targeted Zuma village, each household has an average 5 members in a family, consisting of 2 adults (male and female) and 2 children. Their main source of energy is provided through solar technology and to a lesser degree by reliance on micro-hydro plant nearby.

Table: Average member in the household

	User	Non user
Male adult	2	2
Female adult	2	2
Children	2	2
Total member	5	6

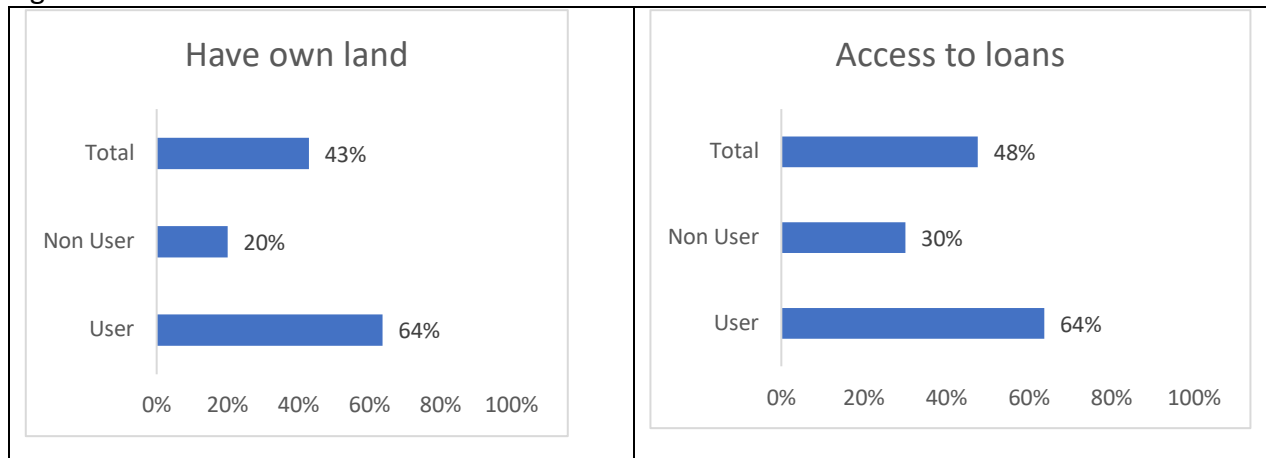
Table: Main source of energy for lighting

Main Source	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Micro-hydro	1	9.1	0	0	1	4.8
Solar	10	90.9	1	10	11	52.4
Kerosene	0	0.0	1	10	1	4.8
Others (Firewood, Battery etc.)	0	0.0	8	80	8	38.1

Higher percentage of households in Zuma village reported higher access to land and services such as loans than their counterparts in the nearby village. For instance 64% of Zuma respondents reported having land ownership, compared to 20 % by those in the non-project village.

Perhaps as a result of greater land ownership patterns amongst Zuma villagers, their access to loans from institutions was much higher at 64%, as compared to 30% among their non-project counterparts.

Figure: Access to land and loans



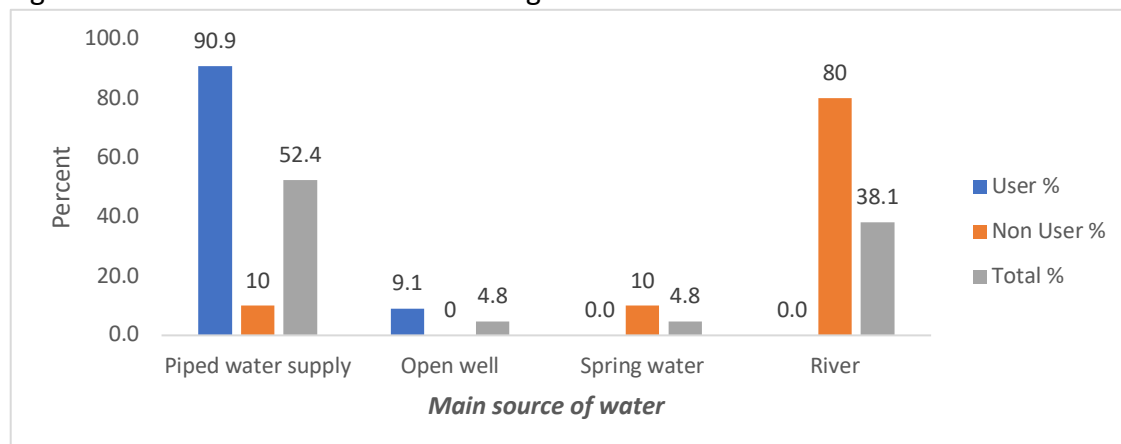
Access to Water

In Zuma village, the introduction of piped water by the project has ensured water availability to 90% of its residents, which is significant when compared to their non-project neighbors who largely rely on river water.

Inhabitants of both villages continue to rely on other water sources such as from open wells and spring water to a much lesser degree.

Water Sources

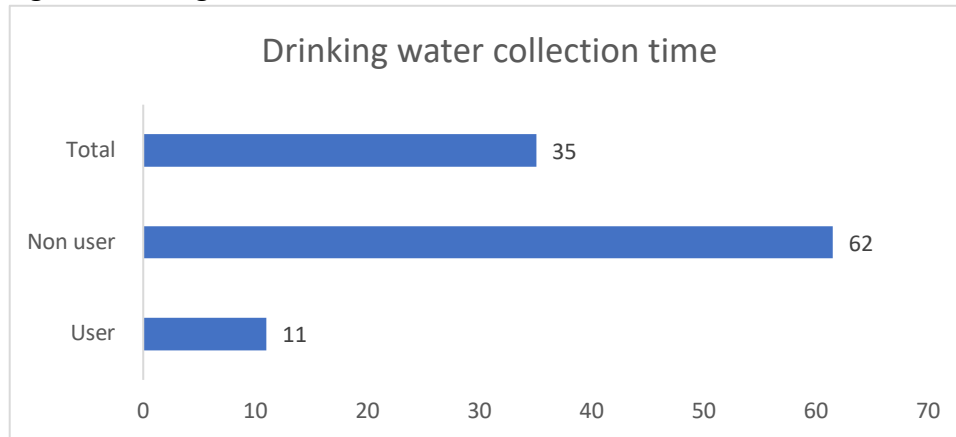
Figure: Main source of water for drinking



Reduced time for water collection

The introduction of piped water in Zuma village has contributed to time savings through a significant reduction in water collection time. The figure below shows that the average time spent on water collection in the project area is 11 minutes compare to 62 minutes for non-project beneficiaries from the nearby village. The time saved for Zuma villagers is 51 minutes a day.

Figure: drinking water collection time



Secondary outcomes of water access

Access to piped water allows for greater ease of conducting other household chores. For instance, responses from project beneficiaries show that over 90% of respondents use piped water for cooking (80.8%) and cleaning (90.9%).

The table below shows the sources of water used for cooking, cleaning and washing clothes at household level. More than three fourth of the total respondents in project intervention area use piped water supply for cooking (81.8%) and cleaning (90.9%). The proportion of household who use piped water supply in non-intervention area is at low for all three cases and is almost 20 % each for cooking and cleaning.

Table: Water source for household chores

Source of water	Cooking for human			Cleaning House			Washing clothes		
	User	Non User	Total	User	Non User	Total	User	Non User	Total
Piped water supply	81.8	20.0	52.4	90.9	20.0	57.1	72.7	20.0	47.6
Handpump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Open well	9.1	0.0	4.8	9.1	0.0	4.8	9.1	0.0	4.8
Covered well	9.1	0.0	4.8	9.1	0.0	4.8	18.2	0.0	9.5
Spring water	9.1	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0
River	0.0	70.0	33.3	0.0	70.0	33.3	0.0	70.0	33.3
Others	0.0	30.0	14.3	0.0	10.0	4.8	0.0	10.0	4.8

2.2 Use of time/ daily activities

Gender-based roles and responsibilities

Time use is intimately linked to production and household activities. Men tend to be engaged in crop production, while women showed higher engagement in the sale of crops and other household items such as milk.

Women and men were equally engaged in paid work outside the home, with women bearing the major burden of household work such home-based income generation, domestic chores such as cooking, caring for family members, cleaning and water collection. The pattern of the division of labor between men and women suggests that men are mostly engaged in production work, outside the home. Women on the other hand, while also moderately engaged in productive work, tend to assume the large share of 'domestic' work. Such 'double burdens' could potentially demonstrate that women suffer from time poverty, and associated health risks.

Table: Responsibility of household members in cropping activities

Crop production	User	Non User	Total
	%	%	%
Women only	0	40	19
Men only	27	20	24
Mainly women but also men	9	0	5
Women and men equally	9	0	5
Mainly men but also women	9	0	5
Not answered	45	40	43
Selling crops, milk etc			
Women only	18	10	14

Men only	9	0	5
Mainly men but also women	9	0	5
Not answered	64	90	76

Table: Responsibility of household members in productive activities

	User	Non User	Total
	%	%	%
Paid work			
Women only	27	40	33
Men only	27	40	33
Mainly women but also men	18	0	10
Women and men equally	18	10	14
Not answered	9	10	10
Home based income generation activities			
Women only	27	30	29
Men only	9	10	10
Mainly women but also men	18	0	10
Mainly men but also women	9	0	5
Not answered	36	60	48
Unpaid community works			
Women only	9	20	14
Men only	9	0	5
Women and men equally	9	0	5
Mainly men but also women	9	0	5
Not answered	64	80	71
care of children and sick people			
Women only	64	90	76
Men only	27	0	14
Not answered	9	10	10

Table: Responsibility of members in household chores

	User	Non User	Total
	%	%	%
Collection of water			
Women only	27	70	48
Men only	9	10	10
Mainly women but also men	18	0	10
Women and men equally	18	10	14
Mainly men but also women	18	10	14
Not answered	9	0	5
Collection of fuelwood			
Women only	45	60	52



Men only	0	20	10
Women and men equally	9	10	10
Mainly men but also women	9	10	10
Not answered	36	0	19
Cooking for human			
Women only	55	90	71
Men only	18	0	10
Mainly women but also men	27	0	14
Not answered	0	10	5
Cleaning in and around house			
Women only	64	80	71
Men only	9	10	10
Mainly women but also men	9	0	5
Women and men equally	9	0	5
Not answered	9	10	10

2.3 Results of time savings

Time Savings and Areas of work

The project intervention of providing piped water to homes has produced time savings from women's work in several areas. Water collection time has been reduced significantly. Additionally, time has been considerably for women in the performance of other chores such as cooking, cleaning the home, caring for children, washing clothes etc. Compared to non-project households, the average time-savings that have occurred for project households is 85 minutes a day.

Table: time saved in different activities attributed to project intervention

Activities	Average time in Minutes per day			Remarks
	User	Non User	Difference	
Time to reach water source	11	62	-51	User HHs save time
Unremunerated community activities	37	0	37	User HHs use saved time in community activities
Water collection time	18	84	-66	User HHs saved time
Cooking for family	75	105	-30	User HHs saved time on cooking
Cleaning utensils	33	37	-4	User HHs saved time slightly
Cleaning in and around house	92	84	8	Have more time to clean in an around house
Caring children	144	120	24	Devote saved time to care for children
Washing clothes	71	124	-53	Saved time on washing clothes
Washing self	43	34	9	More time than non users
Leisure time	153	68	85	User HHs have more time for leisure

Specifically, respondents from the project area stated that time savings were linked directly to the installation of piped water to their homes.

Table: perception on time saving

Perception	User	
	Yes	No
Saved time after installation of water	100	0
Water collection time reduced	100	0
Meal preparation time reduced	73	27

Use of time saved

The majority of women (82%) responded that they plow back the extra time to ‘domestic chores such as house cleaning, or caring for children (64%), income activities (45%). Women spent a small amount of the saved in “recreational activities” (9%).

The use of saved time is useful indicator to measure reduction in women’s time poverty through shifts in gender relations that may occur with any intervention. It also is a useful indicator to assess whether a single technology intervention, without any gender-sensitive social program is a sufficient condition for social change.

Table: use of saved time on different activities

Helping child with studies	64%
Working in the field	27%
Cleaning house	82%
Income generating activities	45%
Social activities	18%
Recreational activities	9%

2.4 Do no Harm Assessment

Do no harm questionnaire is only administered with the households in project intervention area.

Table: Has any household member suffered from a water related accident in last 1year?

	User	
	n	%
Yes	2	18.2
No	9	81.8

Table: Did activities related to water installation prevent you from participating in training?

	User	
	n	%
Yes	3	27.3
No	8	72.7

Additional skills requirement

Table: Do you consider that information and training is sufficient for both man and women?

	User	
	n	%
Sufficient for both	1	9.1
Have been provided equally to men and women	1	9.1



Have been provided more to women than men	1	9.1
Don't know	8	72.7

Table: Have you ever had to sell HH assets to pay for your water installation?

	User	
	n	%
No, Never	8	72.7
Yes	3	27.3

Table: Have activities related water installation prevented you from participating more actively in community works?

	User	
	n	%
Yes	2	18.2
No	9	81.8

2.5 W+ Unit Calculation

W+ units are calculated based on the time saved under different activities that could be attributed to the project intervention.

The formula used for calculating W + is as follows:

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

TS(S)= Time spent for water related activities by Uses Households- Time spent for water related activities by non- user households

The Table below details the different activities and average time spent by both type of households.

User	Calculation	Description
W _{c,p}	85	Total beneficiaries
TS _{coll}	29	Total time to reach water source and collection time.
TS _{cc}	147	Time used for cleaning and washing self-activities using water from the source calibrated on a per-person basis.
TS _{subs c,p}	0	Time saved from installation of water is substituted for other activities



TTsu(USER)	176	Total time spent in different activities by women related to water in intervention area
Non -User	Calculation	
Wc,p	85	Total beneficiaries
TS coll	145	Total time to reach water source and collection time.
TSc	194	Time used for cleaning and washing self-activities using water from the source calibrated on a per-person basis.
TS subs c,p	0	Time saved from installation of water is substituted for other activities is assumed zero
TTsnu(NON-USER)	339	Total time spent in different activities by women related to water in intervention area

W+ Unit Calculation

Average time saved by User HHs (in Minutes) (TTs-TTsnu)	164
Percentage Change	93%
Total beneficiaries (Wc,p)	85
Total W+ units	7905

APPENDIX 2: KNOWLEDGE & EDUCATION DATA

3 RESULTS

Number of women beneficiaries = 2083.

Table 1: Type of households

Household Type	n	%
User	36	61
Non User	23	39
Total	59	100

3.1 Knowledge Retention

The knowledge retention on different aspect of the program were only asked to the user groups.

Category		Level of confidence							
		Not confident		Somewhat confident		Confident		Not specified	
		n	%	n	%	n	%	n	%
Recall	Can remember the components of Goal2Work Phase 1	7	19.4	22	61.1	6	16.7	1	2.8
	Remember some key points of women and men's different roles in household employment decision	5	13.9	17	47.2	12	33.3	2	5.6
	Remember some key challenges women face in getting employed that	6	16.7	16	44.4	14	38.9	0	0.0
Comprehension	Explain how to prepare for an job interview	4	11.1	18	50.0	13	36.1	1	2.8
	Explain how to prepare a CV	4	11.1	14	38.9	18	50.0	0	0.0
	Explain how to network	5	13.9	16	44.4	15	41.7	0	0.0
	Explain how to prepare for a personal pitch	7	19.4	17	47.2	12	33.3	0	0.0
Application	Explain how to respond to a job advertisement	5	13.9	17	47.2	13	36.1	1	2.8



Analytical	Explain the benefits and weaknesses of the 3 platforms	7	19.4	20	55.6	7	19.4	2	5.6
Synthesis	Based on my present knowledge, I can train my family/friends/neighbors	6	16.7	13	36.1	16	44.4	1	2.8
Evaluation	Explain which of the 3 platforms ways of search for opportunities	6	16.7	17	47.2	11	30.6	2	5.6

3.2 Behavioral Changes

Platforms	User		Non User		Total	
	n	%	n	%	n	%
Twitter	6	16.7	10	43.5	16	27.1
LinkedIn	10	27.8	1	4.3	11	18.6
Other specify(Facebook. Internet)	30	83.3	12	52.2	42	71.2

**This is multiple type question so responses may be greater than 100%.*

Table

Strategies used to find job	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Target Marketing	6	16.7	1	4.3	7	11.9
Agencies	6	16.7	3	13.0	9	15.3
Networking	13	36.1	8	34.8	21	35.6
Using internet	22	61.1	14	60.9	36	61.0
Job advertisement	29	80.6	7	30.4	36	61.0
Don't know any strategies	0	0.0	1	4.3	1	1.7
Other specify	2	5.6	0	0.0	2	3.4

Table

Shared knowledge with	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Family members	29	80.6	15	65.2	44	74.6
Neighbors	6	16.7	5	21.7	11	18.6
Other business owners	10	27.8	2	8.7	12	20.3
Friends	22	61.1	10	43.5	32	54.2
Other specify	1	2.8	0	0.0	1	1.7



Table

Shared information	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
CV preparation	31	86.1	5	21.7	36	61.0
Skills analysis	7	19.4	6	26.1	13	22.0
Importance of background screening	12	33.3	8	34.8	20	33.9
Importance of planning	16	44.4	12	52.2	28	47.5
Other specify	1	2.8	0	0.0	1	1.7
Not specified	0	0.0	1	4.3	1	1.7

Table

Told about CV preparation	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Family members	30	83.3	12	52.2	42	71.2
Neighbors	5	13.9	4	17.4	9	15.3
Friends	23	63.9	11	47.8	34	57.6
Other business owners	10	27.8	5	21.7	15	25.4
Other specify	2	5.6	0	0.0	2	3.4

Table

Shared knowledge on job market	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Family members	21	58.3	12	52.2	33	55.9
Neighbors	3	8.3	2	8.7	5	8.5
Friends	26	72.2	10	43.5	36	61.0
Other business owners	7	19.4	3	13.0	10	16.9
Other specify	2	5.6	0	0.0	2	3.4
Not specified	0	0.0	2	8.7	2	3.4

Table

	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Use of knowledge on job seeking						
To tell others	16	44.4	12	52.2	28	47.5
Have developed job hunting plan for myself	26	72.2	8	34.8	34	57.6
Helped job hunting plan for my family/friends	8	22.2	3	13.0	11	18.6
Not specified	2	5.6	3	13.0	5	8.5

3.3 Challenges

Table

	User		Non User		Total	
	n	%	n	%	n	%
q3.1. Lack of support from family members						
Least Difficult	10	27.8	6	26.1	16	27.1
Moderate	10	27.8	2	8.7	12	20.3
Most Difficult	7	19.4	4	17.4	11	18.6
Not specified	9	25.0	11	47.8	20	33.9
q3.1. Family members actively discourage/ you taking a job						
Least Difficult	7	19.4	9	39.1	16	27.1
Moderate	15	41.7	2	8.7	17	28.8
Most Difficult	4	11.1	9	39.1	13	22.0
Not specified	10	27.8	3	13.0	13	22.0
q3.1. Balancing conflicting interests of home and work						
Least Difficult	4	11.1	2	8.7	6	10.2
Moderate	11	30.6	5	21.7	16	27.1
Most Difficult	2	5.6	1	4.3	3	5.1
Not specified	19	52.8	15	65.2	34	57.6
q3.1. Others challenges						
Least Difficult	1	2.8	1	4.3	2	3.4
Moderate	5	13.9	1	4.3	6	10.2
Not specified	30	83.3	21	91.3	51	86.4

Table

q.3.2 Doubts on your confidence	User		Non User		Total	
	n	%	n	%	n	%
Least Difficult	6	16.7	5	21.7	11	18.6
Moderate	13	36.1	1	4.3	14	23.7
Most Difficult	10	27.8	8	34.8	18	30.5
Not specified	7	19.4	9	39.1	16	27.1
q.3.2 Doubts of your skills						
Least Difficult	2	5.6	3	13.0	5	8.5
Moderate	9	25.0	3	13.0	12	20.3
Most Difficult	6	16.7	3	13.0	9	15.3
Not specified	19	52.8	14	60.9	33	55.9
q.3.2 Doubts of your communication skills						
Least Difficult	2	5.6	2	8.7	4	6.8
Moderate	10	27.8	3	13.0	13	22.0
Most Difficult	6	16.7	3	13.0	9	15.3
Not specified	18	50.0	15	65.2	33	55.9
q.3.2 Feel that you may fail because you are a woman						
Least Difficult	2	5.6	4	17.4	6	10.2
Moderate	15	41.7	2	8.7	17	28.8
Most Difficult	11	30.6	1	4.3	12	20.3
Not specified	8	22.2	16	69.6	24	40.7
q.3.2 Other emotional challenges						
Least Difficult	1	2.8	0	0.0	1	1.7
Moderate	1	2.8	0	0.0	1	1.7
Most Difficult	0	0.0	1	4.3	1	1.7
Not specified	34	94.4	22	95.7	56	94.9

3.4 Quality and Sufficiency of Training

Table

Sufficiency of training	User							
	Less Important		Moderately Important		Most Important		Not specified	
	n	%	n	%	n	%	n	%
q.3.3 Training course was too short	9	25.0	9	25.0	8	22.2	10	27.8
q.3.3 Training course not sufficient	11	30.6	5	13.9	5	13.9	15	41.7



q.3.3 More training required	4	11.1	11	30.6	9	25.0	12	33.3
q.3.3 Other trainings	0	0.0	0	0.0	1	2.8	35	97.2

Table : Additional training /Knowledge required

	User							
	Less Important		Moderately Important		Most Important		Not specified	
	n	%	n	%	n	%	n	%
q.3.4. Marketing skills	4	11.1	2	5.6	11	30.6	19	52.8
q.3.4. Communication skills	1	2.8	8	22.2	12	33.3	15	41.7
q.3.4. Leadership skills	4	11.1	6	16.7	14	38.9	12	33.3
q.3.4. Technology skills	4	11.1	16	44.4	8	22.2	8	22.2
q.3.4. Other skills	0	0.0	0	0.0	1	2.8	35	97.2

APPENDIX 3: FOOD SECURITY DATA

METHODOLOGY

Sample size

The final sample size using this method is as follows:

Sample size calculation	
Population size =	40
Assumed proportion	0.25
Level of acceptable error	10%
Confidence level	90%
Required Sample Size	23
Additional sample collected	4
Total sample HHs	27

We have collected a total 27 samples of which 18 are from the project intervention area and 9 from the non-project intervention area. Sampling was done in two stages due to the need to add additional respondents after the initial survey exercise. In the first stage the enumeration area was selected purposively where the Soup Kitchen activity was active, and in a similar locality nearby as non-intervention area. In the second stage (completed during the time of the COVID 19 epidemic) , households were selected randomly using a systematic random sampling method.

The sample size was calculated in compliance with the general guidance on sampling, as found in Guidelines for sampling and surveys for CDM project activities and program of activities. http://cdm.unfccc.int/Reference/Guidclarif/meth/meth_guid48.pdf.

4 FOOD SECURITY

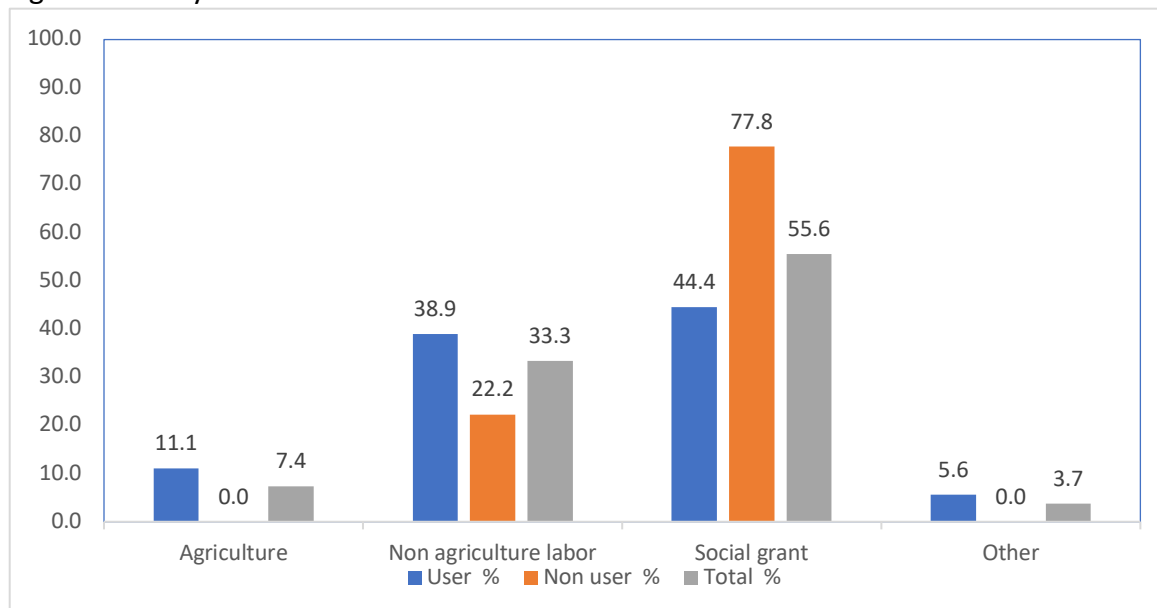
4.1 Results

4.1.1 Background /Structural limits of food access

Table: Respondent details

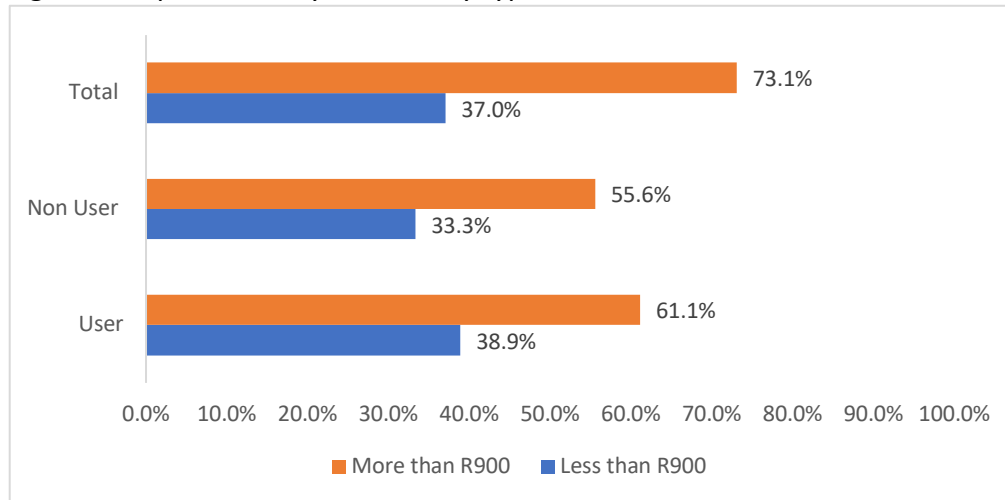
	Freq.	Percent
User	18	66.7
Non User	9	33.3

Figure: Primary source of income



The results showed that the primary source of income for both user and non-user is social grant followed by non-agricultural job. Non users (77.8%) were more reliant on social grants compared to users (44.4%).

Figure 2: Expenditure by beneficiary type



Of the total, 61.1% of the users spent more than 900 R compared to 38.9% of the nonusers able to do so.

Figure: Average period of food sufficiency from own farm production

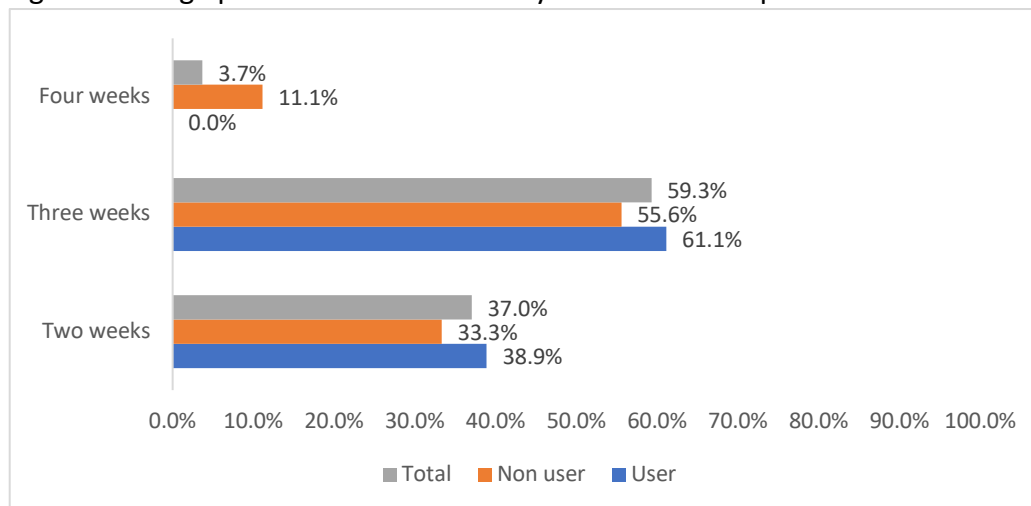


Table: Main source of food

Main source of food	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Local Market products	6	33.3	5	55.6	11	40.7
Super market	6	33.3	5	55.6	11	40.7
Other	8	44.4	2	22.2	10	37.0

*Multiple type question

Table: Role of men in food production, processing and marketing

Role	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Production	4	23.5	2	22.2	6	23.1
Processing	7	41.2	3	33.3	10	38.5
Marketing	0	0.0	0	0.0	0	0.0
Cooking and serving	3	17.6	4	44.4	7	26.9
Other	6	35.3	2	22.2	8	30.8

Table: Role of women in food production

Role	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Production	0	0.0	1	11.1	1	3.7
Processing	4	22.2	4	44.4	8	29.6
Marketing	0	0.0	0	0.0	0	0.0
Cooking and serving	17	94.4	8	88.9	25	92.6

Table: Expression of the food insecurity in traditional ways

Expression food insecurity	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Through songs	0	0.0	0	0.0	0	0.0
Through Saying	11	61.1	7	77.8	18	66.7
Through Stories	0	0.0	1	11.1	1	3.7
Through Myths	1	5.6	0	0.0	1	3.7
Other	6	33.3	1	11.1	7	25.9

Table: Cooking and consumption strategies used during food crisis

Strategies	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Limiting adult female food intake	6	35.3	2	22.2	8	30.8
Limiting adult male food intake	1	5.9	3	33.3	4	15.4
Reducing number of meals per day	5	29.4	2	22.2	7	26.9
Eating less nutritious food options	1	5.9	0	0.0	1	3.8
Strategic practices in cooking	1	5.9	1	11.1	2	7.7
Compromising on culturally significant food	4	23.5	4	44.4	8	30.8
Other	0	0.0	0	0.0	0	0.0

Table: Food provisioning during periods of food insecurity

	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Self-produced Agri-products	0	0.0	1	11.1	1	3.7
Community gardens	3	16.7	3	33.3	6	22.2
Home gardens	1	5.6	3	33.3	4	14.8
Forests for NTFPs	0	0.0	0	0.0	0	0.0
Local Market products	9	50.0	5	55.6	14	51.9
Food banks	7	38.9	0	0.0	7	25.9
Emergency Food Aid	3	16.7	2	22.2	5	18.5
Other	1	5.6	1	11.1	2	7.4

Table: Income sourcing strategies during periods of food insecurity

	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Borrowing money/food from family and friends	12	66.7	7	77.8	19	70.4
Working in exchange for food/money	3	16.7	3	33.3	6	22.2
Credit system with local shops or landowners or neighbors	7	38.9	2	22.2	9	33.3

Table: Challenges during natural disaster or food insecurity

	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Lack of relevant aid	1	5.6	0	0.0	1	3.7
Increased food prices in the market	16	88.9	9	100.0	25	92.6
No access to the market	2	11.1	1	11.1	3	11.1
Indebtedness	0	0.0	1	11.1	1	3.7
Sexual harassment	0	0.0	1	11.1	1	3.7

Table: Qualifying criterion to access sources

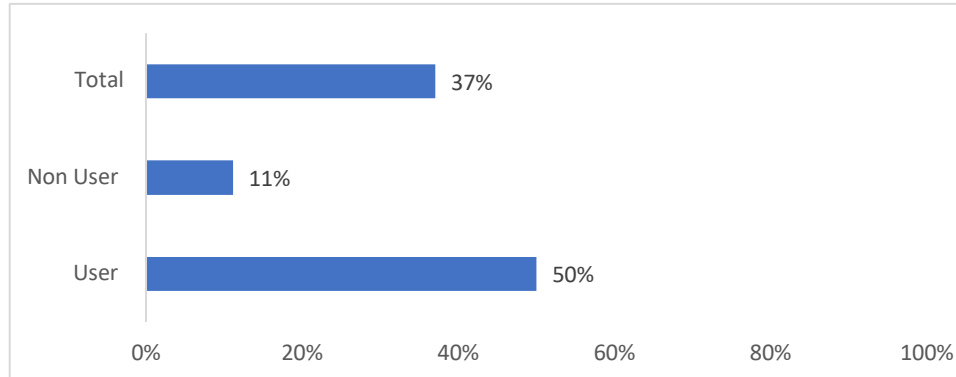
	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Policy and operational dynamics	1	5.6	0	0.0	1	3.7
Poverty and wealth ranking	5	27.8	5	55.6	10	37.0
Member of Forest User group	1	5.6	0	0.0	1	3.7
Geographic distance	1	5.6	0	0.0	1	3.7
Other	10	55.6	4	44.4	14	51.9

Table: Key determinants of food insecurity

	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Access to land	1	5.9	1	11.1	2	7.7
Poor agricultural production	0	0.0	1	11.1	1	3.8
Unstable livelihoods or income	4	23.5	2	22.2	6	23.1
Changing dietary practice over seasons	2	11.8	2	22.2	4	15.4
Poverty	14	82.4	7	77.8	21	80.8
Poor soils	0	0.0	1	11.1	1	3.8

4.1.2 Health dimension

Figure : Proportion of the surveyed respondents who had participated in trainings on health & nutrition



Higher percentage of respondents from project intervention area (Users) have participated in trainings (50%) compared to only 11% of non-users on health and nutrition.

Table Training types and participation

	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Through different projects and interventions	2	16.7	0	0.0	2	15.4
Through community leaders	4	33.3	1	100.0	5	38.5
Through women's groups	3	25.0	0	0.0	3	23.1
Through educational classes	3	25.0	0	0.0	3	23.1
Through family and peers	4	33.3	1	100.0	5	38.5
Through traditional oral history	3	25.0	0	0.0	3	23.1
Other	4	33.3	0	0.0	4	30.8

Table: Misconception about food and nutrition

	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Associating nutritional value with packaged food	7	38.9	3	33.3	10	37.0
Higher price as a factor for better nutrition	8	44.4	6	66.7	14	51.9

Associating nutritionally deficient food as status food	4	22.2	4	44.4	8	29.6
Locally available nutritious food labeled as inferior food	4	22.2	3	33.3	7	25.9
Other	2	11.1	0	0.0	2	7.4

Table: Reasons for trading healthy food for packaged food

	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Time saving and convenience	15	83.3	9	100.0	24	88.9
Lack of knowledge	2	11.1	2	22.2	4	14.8
Market replacement	1	5.6	0	0.0	1	3.7
Other	2	11.1	0	0.0	2	7.4

Table : Do you think cultural practices and norms (like eating last) result in difference of nutrition derived by men and women?

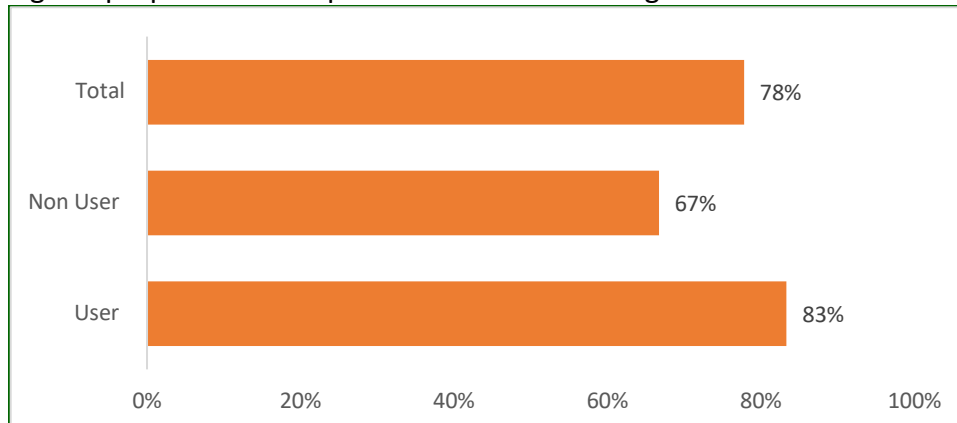
	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Yes	10	55.6	4	44.4	14	51.9
No	5	27.8	2	22.2	7	25.9
Don't know	2	11.1	3	33.3	5	18.5
Other	1	5.6	0	0.0	1	3.7

Slightly higher than half of the respondents (51.9%) think that cultural practices and norms (like eating last) result in difference of nutrition derived by men and women. Among them higher proportion of users think so compared to non users.

Table: perception on association between poor diet and disease

Associated risk	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Obesity	10	55.6	3	33.3	13	48.1
Diabetes	12	66.7	7	77.8	19	70.4
Heart disease	0	0.0	1	11.1	1	3.7
Underweight	12	66.7	4	44.4	16	59.3
Frequent colds	1	5.6	0	0.0	1	3.7
Other	1	5.6	1	11.1	2	7.4

Figure: proportion of respondents who fear failing their roles in times of food insecurity



The following table describes about the experiences or feelings as a result of the food insecure. Those who feel like failing their roles as mother, wives and daughters were further asked on how they experience. Majority of them feel shamed (66.7%) which is higher among non users. Also they experienced fear followed by anxiety and depression (23.8% each) at the time of food insecurity. Violence is not experienced by user group whereas 16.7% of the non users did so.

Table : Feelings if food insecure

	Beneficiary type					
	User		Non User		Total	
	n	%	n	%	n	%
Fear	11	73.3	2	33.3	13	61.9
Anxiety	4	26.7	1	16.7	5	23.8
Depression	3	20.0	2	33.3	5	23.8
Shame	9	60.0	5	83.3	14	66.7
Violence	0	0.0	1	16.7	1	4.8

*Multiple type question so total may be greater than 100%

4.1.3 Women's agency and contests practices

Table: Decision making

Decisions regarding production and marketing of agricultural production	User		Non User		Total	
	n	%	n	%	n	%
Men	1	6.3	0	0.0	1	4.0
Women	9	56.3	5	55.6	14	56.0
Both	0	0.0	2	22.2	2	8.0

Don't know	6	37.5	2	22.2	8	32.0
Controls over the financial aspect of production and selling of agriculture products						
Men	2	11.1	0	0.0	2	7.4
Women	6	33.3	2	22.2	8	29.6
Both	1	5.6	5	55.6	6	22.2
Don't know	9	50.0	2	22.2	11	40.7
Decisions regarding dietary concerns in the household						
Men	1	5.6	1	11.1	2	7.4
Women	12	66.7	6	66.7	18	66.7
Both	0	0.0	2	22.2	2	7.4
Don't know	5	27.8	0	0.0	5	18.5

4.2 Calculation of W+

The total impact of food security on women's empowerment is calculated by the sum of the total difference between Structural Limits to Access to Food (A), minus the sum of Women's Navigation Strategies (B), plus the sum of knowledge of the Health Dimensions of food security (C) multiplied by the number of women (WL) in the project area households, within a cluster of "like" projects within a verification period.

FSL = Sum of { [A] – [(b1+b2+b3+b4) – (b5+b6+b7+b8)] + [(c1+c2+c3+c4) – (c5+c6+c7+c8)]}

FSL = Food Security Impact

WL= Number of women targeted by the intervention = 40 (for this project)

Table: W+ average per unit

Intervention type	Average W+ score	Std. Dev.	Freq.
Intervention HH	18.72	2.76	18.00
Non-intervention HHs	17.67	3.91	9.00
Total	18.37	3.15	27.00

Percentage difference among beneficiaries among project intervention area and non-project intervention area = 6%

Therefore W+ units = Total beneficiary * percentage change = 40*6= 240 units