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Carbon Emission Reduction for Self Sustainable Environmental Care (CCER), Narrative Report of the Activities carried out from May 2017- December 2019

1. Introduction

RDIS organization has been implementing the carbon credits emission reduction project as scale up phase after the successful implementation of pilot phase which ended by May 2016. The implementation of CCER scale up phase had delayed because of standards in terms of thermal efficiency of the former improved cook stove “CANARUMWE” distributed during the pilot phase with lower efficiency as per stove test results (20.3%). The process of getting a new design, conducting both test and adoption test by users has taken 10 months. Early 2017 the project started with a target of 6448 Households (6448 HHs). At grass root level, the project has helped to tackle the following issues: hunting, cutting, fetching and carrying of the tree logs and branches by man primarily living in rural communities have caused increasing deforestation despite the RDIS’s forestation and tree planting efforts.

Over the last three years, RDIS through CCER project was able to distribute and install a number of Rural Wood Stoves and has also distributed Ceramic Water Filters among the poor families in its operational areas (Shyogwe, Butare, Kigeme and Cyangugu dioceses). The devices distributed are in proper use and are impacting the lives of the users. This report outlines the main activities that were performed during the last three years, figures, and the ongoing strategies for bringing on board other investors for project expansion, and the challenges encountered. The overall idea for seeking for new investors is to distribute more stoves to more communities, generate more credits and make the project more efficiency given some activities such as “stakeholders consultation meeting, stove design, adoption test, environmental impact assessment and graphic design done during the current phase may not necessarily be repeated in we happen to implement CCER phase two

2. Planned and realized activities for the reporting period (May 2017- December)

No	Planned project activities	Realized activities	Comments / observations
1.	Capacity building of RDIS staff, enumerators and installers	<ul style="list-style-type: none"> ✓ RDIS staff was trained on carbon project implementation and on monitoring, tracking information concerning the use of stoves, ceramic water filters, completion of sales agreement, environmental care and global warming, database elaboration, on site quality control ✓ RDIS enumerators were trained on the use of improved cooking stoves and on Ceramic Water Filters. ✓ RDIS installers were trained on :the , maintenance of Improved Cooking Stoves 	The implementation of CCER project is going on well due to the knowledgeable staff of RDIS, enumerators and installers who play a key role in the throughout the implementation and tracking of the project from end users
2.	Raising awareness of community members and others stakeholders all through CCER project	<ul style="list-style-type: none"> ✓ Benefits of CCER project (reduction of wood consumption, reduction of school dropout due to less time allocated to wood collecting, reduction of indoor air pollution , reduction of respiratory diseases) via project graphic design ✓ Roles of the members of the communities and other stakeholders throughout CCER project implementation and follow up ✓ Causes and consequences of human actions towards global warming ✓ Identifications of project beneficiaries, models of CCER project(subsidy and free distribution models), contributions of 	<p>As outputs of awareness raising, RDIS is experiencing the following:</p> <p>Very good ownership by end users and other stakeholders</p> <p>Proper usage of project devices (RDIS rural wood stove and ceramic water filters)</p> <p>Strong need of RDIS rural wood stove by members in the communities</p> <p>Local leaders' support and willingness for the project expansion</p>

		beneficiaries (in kind and money)	
4.	Purchasing RDIS rural wood stove (RDIS-RWS) and Ceramic Water Filters	Ordering stoves and ceramic water filters Collecting devices from making cooperative Transporting devices to the communities	We encountered some cases of the break of stoves and ceramic water filters Members of the communities appreciate highly the devices Local leaders appreciate the devices distributed to their fellow
5.	Distributing of RDIS-RWS and ceramic water filters	List of beneficiaries based on set criteria Venue and date and time of distribution Real distribution together with local leaders Signing receivable note Setting time with beneficiary for the installation of stoves	Since the start of the project to date, the distribution is perfectly done
6.	Installation	After the distribution of RDIS RWS trained installers enter every home of our beneficiaries who got stoves to see whether or not basic materials needed for installation are provided by members of the families; and, then, if they the following stages follow are done: 1. Building stove body and the fixing of burning boxes 2. Completion stove body	During the installation sometimes beneficiaries don't keep on time which causes the delay in installation. The beneficiaries are happy for having installed stoves freely. The RDIS RWS are put in use nine days after the installation,
7.	To ascertain the quality of produced stoves and Ceramic water filters.	RDIS visits the stove manufacturer to ensure the standards and in terms of sizes of burning box, size of liners, status of stoves	As far as standards and quality are concerned , even though we did not encountered significant issues , RDIS advised the stove making company to plan for the usage of machinery throughout the production chain as to meet the highest quality and standards and, as to easy the production

			process. Until nowadays, much work for stove production is done by hands (more than 70%) and, peoples.
8.	To develop a stove liner Quality Assurance and Quality Control protocol (QA & QC)	RDIS has drafted a QC/QA protocol to ensure that the manufacturer maintains high quality stoves	The protocol was developed, revised and shared to all concerned bodies
9.	Carrying out maintenance of stoves that have been in use for over 12 Months	RDIS started to do maintenance of any of the stoves that have been in for at least one year	Maintenance is done continuously. Up to 16 th December about 3234 stoves were maintained and the maintenance sheets are always filled in. All stoves maintained and less than year stoves are all in good conditions and used regularly as per our monthly monitoring report from RDIS Field Coordinators
10.	Completing sales agreements and sending them to ICSEA Ltd, the Coordinating & Managing Entity of the ICSEA PoA.	5,192 sales agreements copies were completed and submitted to Improved Cook Stoves for East Africa (ICSEA).	RDIS does this activity by ensuring that it provides a black & white copy of the graphic design to each stove user alongside a copy of the sales agreement.

11	To do marketing of the project	<p>RDIS did not cease to explore funding opportunities. However the CCER Stoves Enterprise which was expected to be entering its second phase CCER2 did not commence yet.</p> <p>A promotinal video film for the ongoing CCER one was available since from middle 2019 project for distribution of improved cook stoves to an audiences in Rwanda, in Germany and in EU and in Africa at large. The film project is supported by UEM and Klima-Kollekte and the film is expected to be ready for distribution in February this year.</p>	<p>The cook stove benefits the whole household, regardless of gender, on the counts of climate change mitigation, reduced deforestation, and the reduced incidence of water-borne diseases.</p> <p>Among the goals of the film project are to bring awareness to the public how a project for promoting use of Improved Cook Stoves (in conjunction with Carbon Trade) plays an important role in Climate Change mitigation and Poverty Reduction.</p>
12	Perform continuous home visits' to the stove end users/ tracking and evaluation	<p>There is regular follow up, supervision and tracking of the stoves to ensure that the devices are being used well, to determine the drop off rate, and plan for the replacement and maintenance of the devices accordingly.</p>	<p>This type of Monitoring is done in order to find out whether the stove is in use according to the requirements of the project and whether he/she has got all relevant documents and materials as set in the project. Over the last 3 years, some amongst 5,192 stove end users interviewed have confirmed that the efficient stove reduces firewood consumption at three fifths when the wood is well dried.</p>

3. Figures for the distributed stoves (HHs) and Ceramic Water Filters. (May 2017-December 201)

Zone	Stoves in use and S.A sent to ICSEA	Number of Stoves in use but S.A not yet recorded	Number of stoves under installation by the end of Dec 2019	Total Number of stoves distributed (HHs)	Number of Ceramic Water Filters distributed
SHYONGWE	1,476	250	120	1,846	467
BUTARE	1,798	0	122	1,920	360
KIGEME	1,024	102	120	1,246	215
CYANGUGU	894	4	120	1018	240
TOTAL	5,192	356	482	6,030	1,282

The below photos show the transportation of stoves by beneficiaries from a distribution Centre



4. CCER Growth strategy

RDIS is still planning to source working capital finance to expand from its initial CCER project, and will repay these funds using the carbon credits to be generated. RDIS was able to exceed the set amount of credits in Emission Reduction Purchase Agreement stipulating 5000 tons of Credits;

as per the verification conducted by Designated Operational Entity (ICSEA) the amount of credits is 5679 CERs¹, this is an indicator of high performances and we are very grateful to : ICSEA, bread for the world and UN Auditor for having played significant roles which current achievements would have not been realized. The CCER2 project will finance the distribution of a further 20,000 improved cook stoves to poor households in rural Rwanda by 2027. RDIS is again looking for dedicated and patient financing partners that will allow it to continue its activities collateralized by CDM/Gold Standard carbon credits.

5. Findings

Monitoring and follow up is regularly conducted to ensure proper and effective use of energy saving stoves-RDIS rural wood stove. The monitoring is carried out by project staffs at different levels starting from Enumerators, Field Coordination staffs and staffs at RDIS central office. During the visits to the households which are using our improved cook stoves, we have realized that stoves are being used in accordance with terms and conditions set out in the Agreement between RDIS and stove users especially the strict use of our stove and stopping use of three stones fire (baseline stove), sharing information with project staffs whenever there is need for stove maintenance or any other issue that needs RDIS attention.

Households that are using our efficient stoves have expressed their satisfaction toward the use of the RDIS rural wood stove and its benefits that comprise the reduction of the amount of firewood used and hence the saving of money spent on the purchase of firewood. They have also attested that it reduces time allocated to the cooking process whereby they no longer need to hang around to keep adding firewood and fanning the fire. When the stove is already hot, it can continue cooking without necessarily staying by. The efficient stove use has as well reduced time that was spent by children collecting firewood. This is explained by the fact that firewood that was used for a day can now be used for three days and thus reduces the frequency of firewood collection. Energy efficient cook stove users assert that for light meals that need to be warmed up, they can do that after cooking without adding firewood. This means that when users finish cooking, the stoves remain hot to the extent of warming up some meals such as sauce without adding more firewood.

¹ ICSEAPoAGS4GG Monitoring Report from -101.1-T-MR_18.11.2019v06

In addition to the monitoring of efficient cook stove at household level and in terms of proper and effective use, we also carry out quality check where we ensure that all project data are accurate without discrepancies between hard and soft copies of our project CPA. We check the coherence between Serial Numbers, Sales Agreement Numbers, Sales Date, Users physical address and contacts among other issues.

6. Challenges

Prior to the scale up of the CCER project by RDIS in close collaboration with:

- 1) Bread for the World, Project Financing Partner
- 2) Improved Cook Stoves for East Africa “ICSEA” as carbon partner
- 3) United Evangelical Mission as a pre-financing Partner

The two overall objectives stated as follow:

- I. Build the capacity of RDIS staff for the development, implementation, monitoring and financing of carbon project
- II. Find an efficient and effective system for distributing and promoting the sustained use of ceramic water filters in rural communities. Collect lessons learnt as basis for the scale up of activities
- III. Understand, evaluate and improve the processes of producing, distributing and promoting use of energy saving stoves in local rural communities. Collect lessons learnt and baseline information as a basis for the scale up of activities As per the report of July 8th ,2014 (internal report as well as the report provided by Martha, the former Consultant), the above objectives were fully met. Coming back to the challenges and problems we faced, the following are the crucial ones which would have prevented the scale up of activities if they were not addressed:
 - I. Poor efficiency of RDIS former stoves design “CANARUMWE”. During the implementation of “Carbon Emission Reduction for Self-Sustainable Environmental Care “with the help of our consultant Mrs. Martha we conducted both Kitchen performance and Water boiling tests for the former improved cook stoves distributed during the pilot phase. The results were promising “29.4% “. Before the start of the project scale up, another test was required by the carbon partner “ICSEA” and Tumba College of Technology was selected to conduct it, the “Fixed Stoves Thermal Efficiency Test Results “revealed that the

average thermal efficiency was 20.3% which do not comply with Clean Development Mechanism methodology which stipulates the minimum thermal efficiency as per standards should at least be “21%” efficiency.

RDIS went through the critical period which was a precondition for the continuation of the project “This has been the biggest challenge we encountered and, yet, it was neither budgeted for nor planned for”

6.1. Looking for new stove design for which thermal efficiency is much higher

RDIS hired a knowledgeable person to design a new stove model with high efficiency. The stove was designed, dried, burned and taken to Centre for Research for Energy and Energy Conservation owned by the University of MAKERERE -UGANDA. Greatly, results were much better than the former improved cook stove, 29.4% compared to 20.3%. The whole process, from the design up to the delivery of the test results has taken 3.5 months. RDIS had shared the results with both “Bread for the World and ICSEA” and, again, an adoption test was requested by the Financing Partner; which was done and, report was submitted to stakeholders.

6.2 Conducting an adoption test

Household Rural wood stove adoption test was primarily carried out to ascertain the level of household attitude towards the new stove model. A simple random sampling is the RDIS most widely-used probability sampling method, probably because it is easy to implement and easy to analyze. 4 paged open-ended questionnaire that largely provided high chances to both respondent and interviewer to go beyond the responses and questions written down was administered to 36 households.

The compilation of data and analysis was processed in Excel. 100% of the households are happy having received the rural wood stove, many say they are happy with the way there were selected and they have many advantages they have found with using this stove, namely; reduces the difficulties that one meets while lighting the stove and adding in firewood, significant reduction of firewood used before, general cleanliness in the cooking area, reduced time of cooking, well prepared food because of the increased heat in the linear even when one has removed all the firewood and charcoal (simmering). Again, the adoption test process took three months, and, straight after, findings were shared with Bread for the World and ICSEA.

Unfortunate, RDIS could not start the implementation of the project even after the submission of adoption test findings, given, the signing of the Emission Reduction Purchase Agreement by Bread has taken so much time than expected. Finally, February 29th, 2017 as per the information issued on the same date.

RDIS had to retain the personnel trained during the pilot phase which was mainly meant to equip staff with knowledge and skills on how to implement and monitor carbon project. The issue was discussed by both “Management Team and BoD of RDIS” to see whether or not the organization would allow trained staff to go and seek for jobs elsewhere given that the scale up of activities was extremely delayed. Both bodies resolved that staff can be retained as the cancellation of their job contracts was a sufficient fact that RDIS could not scale up the carbon project. Ten months gap period was encountered by the organization before the scale up of carbon project activities; recall that, unplanned and unbudgeted activities were going on as mentioned above. The retainer of staff during the ten months increases staff cost, from **129,675,852 Rwf** to **146,801,754 Rwf**, a surplus of **17,125,905 Rwf**

6.3. Unbudgeted expenses

As per the recent financial report and assessment shared with the Financing Partner “Bread for the World” RDIS encountered obligatory huge unbudgeted expenses that we could not choice ignoring them unless otherwise we choose for not implement the project; just few examples for the information of whoever reads this report

6.4. Taxes on verification fees

We have discussed the issue with both “Uganda Carbon Bureau and Bread for the World”. None of us has thought of taxes during the budgeting and the development of the CCER financial model. However, as per Rwandan Law, whoever charges fees for services and products delivery must comply with Tax Law in the Republic of Rwanda. RDIS did ask Uganda Carbon Bureau whether there is a possibility to avoiding the taxes by giving away some carbon credits as in-kind payment; unfortunately, this option could not work. As per the three years report, 2017-2019, the total amount allocated to taxes payment is eleven million four hundred fifty thousand eight hundred thirty (**11,455,830 Rwf**). Payment of taxes is to continue until the last payment for verification will be made; it is a continuous unavoidable expense

6.5. High charges by the Bank

So far, as per the bank statement of the project bank account, by the end of December 2019, RDIS encountered bank charges worthy seven hundred thirty-three thousand six hundred ninety-seven Rwandan Francs (733,697 Rwf) again, unbudgeted expenses which is likely to continue until the project phase out

6.6. Unplanned expenses

Throughout the implementation and monitoring of the project, we came to know that some important items such as: plastic protector for sales agreement which are to be kept at least for nine years period, umuringa chemical product for ceramic water filters were not planned for.

6.7. Extension of activities and marketing events

Throughout the implementation of CCER phase one, we have tried to market our project as way of attracting other investors for the extension of activities. In this regard, under the guidance of UCB as our coach, RDIS submitted a Business Plan, Budget and Financial Model to PFAN “Private Financing Advisory Network” for the expansion of our improved cook stoves enterprise - CCER 2. The business plan as submitted by RDIS was shortlisted to the final 10 projects from the many applicants from around the region. Following this selection process by PFAN, RDIS along with 9 other companies was invited to participate in an Investment Forum held in Nairobi at the “Villa Rosa Kempiski Hotel”. RDIS was among the competitors who proved their ability of implementing their investment projects with a high probability of success. Also, we have participated in Africa Carbon Forum held in Kigali Convention Centre, but, we did not get a chance to present something. Some money was also allocated to such important and unplanned activities.

We are still following up and interesting partners from different corners of the World as a way of extending CCER project activities

6.8. Less amount received in comparison with the amount stipulated in ERPA Contract

The signed Emission Reduction Purchase Agreement dictates the figures that are to be referred to throughout the implementation, monitoring including sales and purchase. As per contract, quarterly advancements are made by the buyer "Bread for the World". Quarterly funds request is provided by RDIS as seller of CERs, and, requests are always calculated according to the amount in the contract and budget. Recent assessment revealed the following:

- As per ERPA contract, planned Income is worthy 389,925,084 Rwf
- Actual Income / received equals to 344,900,344 Rwf
- Variance equals to 45,024,740 Rwf

6.9. Implications of unbudgeted expenses on CCER project's target

The above-mentioned challenges and expenses have affected our activities in terms of target towards ceramic water filters; RDIS is not able to distribute the total figure of 6000 of ceramic water filters; by the end of December 2019, a total number of 1,133 were distributed, furthermore, early 2020 additional number of 149 ceramic water filters is planned for distribution.

Done on 17th March 2020

On behalf of RDIS CCER project staff

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