



**EBAFOSA**

Ecosystem Based Adaptation for  
Food Security Assembly



**EBAFOSA UGANDA SOLAR DRYERS TRAINING REPORT**

**SOLAR DRYER VALUE  
ADDITION TRAINING  
FOR VILLAGE SAVINGS  
AND LOAN ASSOCIATION  
(VSLAS) TO REDUCE POST  
HARVEST LOSSES FOR  
CASSAVA, PUMPKINS, AND  
VEGETABLES IN UGANDA.**

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# CONTEXT

Studies show that in the past 30 years, [only about 5%](#) of investments in agricultural research and education has been directed towards preventing postharvest losses (PHLs) in Africa. This is a significant training and skills gap considering that PHLs account for up to \$48billion lost each year in Africa, a loss that represents critical lost socioeconomic opportunities – including income, food security, and economic growth opportunities, which constitutes the core of climate resilience building on the continent according to the [World Bank](#). With over 70% of Africans drawing their livelihoods from agriculture, finding sustainable solutions for postharvest losses is a critical need to drive much needed climate resilience.

Uganda is not different. In the agriculture sector, which accounts for [approximately](#) 21.9% of Uganda's GDP, 85% of its export earnings, 68% of total employment, and all food requirements, PHLs account for [up to 25%](#) of what is produced. For example, cassava is Uganda's [second](#) most [important staple crop](#) and for which Uganda is the [sixth largest](#) producer in Africa. Cassava is also classified as an [emerging market](#) oriented commodity – with potential demand [increases of up by 60%](#) annually [not only within Uganda but larger East Africa](#). This provides a natural market comparative advantage to drive socioeconomic growth and enhance the countries climate resilience.

While this is significant advantage, Uganda's cassava loses [up to 90%](#) of its initial value – translating to [over \\$30 million in losses every year](#). This is a significant loss in job, income & revenue opportunities to the Ugandan economy. In addition, When fully commercialized & maximized, the cassava value chain can also save Uganda up to [\\$300 million annually](#) in import expenditures. These savings represent additional jobs & incomes and capital that can be injected into Uganda's economy to capitalize other critical growth sectors to drive ideals of the vision 2040.

In addition, cassava is the flagship crop for UNEP-EBAFOSA Uganda implemented in the Village Savings and Loans Association (VSLAs).

Considering these aspects, addressing these losses is a critical need. Accordingly, this intervention addressed two interrelated gaps that stand out not only for Uganda, but Africa's PHLs - the lack of training and inadequate access to processing and value addition capacity. The specific intervention was in providing training in the application of accessible solar dryers among communities of growers, in financial and market aspects to enable them adequately to manage their incomes once they recover the PHLs, and training of willing young people through the Innovative Volunteerism approach where youth voluntarily volunteer themselves to retool their skills to become fabricators of these dryers. This training then guided the decentralization of fabricated dryers among the community to enable them to recover their PHLs and turn them into incomes. The beneficiaries are farmers clustered in local savings cooperatives called the "Village Savings and Loans Association (VSLAs) of the Buganda kingdom under the CBS PEWOSA cooperative as well as willing young people registered in the EBAFOSA mentorship hub called Innovative Volunteerism.

## INTERVENTIONS

- ▶ **Training on financial management and linkages of Village savings and loans associations to financial cooperative of CBS-PEWOSA cooperative;** Credit is one of the most difficult factors of production to be accessed by farmers. VSLAs were linked to financial literacy and education to give them capacity building on bookkeeping, leadership and enable them start saving on the dividends they get from income generating activities trained to the members, 60 members participated in the financial training, and this enable them structure the management and introduction committees. The finance training mainly aimed at creating sustainability of the income generating activities and enable VSLAs access credit to invest in their value addition activities this include purchase of raw materials, renting of acreage of cassava and vegetables, purchase packaging materials for products.

*Daudi Zziwa a CBS –PEWOSA Cooperative mobilisation officer says that UNEP-EBAFOSA Uganda introduction of agricultural income generating activities of value addition of cassava and vegetables is very good because the members have a source of income to save weekly, CBS-PEWOSA Cooperatives advices other VSLAs to take up this approach. All VSLAs must have an income generating activities for them to survive.*

- ▶ **Training on conducting agricultural produce value addition for vegetables, pumpkins, and cassava;** This work enhanced reduction of PHLs by conducting a value addition training for the crops grown by the members of the VSLAs. VSLAs members of Mukama Mulungi VSLA, Sugu Agalyawamu Women group were trained on postharvest handling using solar dryers. They were trained on pre-preparation of their produce before it can be loaded onto the dryer for processing / dehydration and preservation. Accordingly, they were trained on how to prepare cassava, pumpkins, and chip them in small slices. Vegetables were cleaned and washed in clean water and halfway boiled to enable them dry very fast in the solar dryer. During the training it was repeatedly observed that cassava dried in two days, pumpkins dried in 18 hours of sunshine and vegetables of Africa egg plants, nakatti dried in three days of sun drying in the solar dryers. The digital moisture meter was used to record moisture content and temperature rates of the samples. Cassava dried to moisture content of below 10%, vegetables dried below 9.0% and pumpkin chips dried below 10% moisture content. Training also involved equipping VSLA members with skills on use of digital moisture meters to monitor drying. The training covered skills on how to use this moisture meter in a solar dryer, the importance of knowing the moisture content in the crops they are drying. It was explained to the members that moisture content below 10% enables dried cassava chips and vegetable to have a long shelf life before they are affected by insects<sup>1</sup>. Sugu Agalyawamu women group was also dried on how to use digital moisture meter<sup>2</sup>

*“EBAFOSA has made as a model VSLA in our district, we now have a solar dryer which we use to add value on vegetables and cassava, pumpkins our savings have increased now have introduced separate saving account for the sell we earn. Last month we managed to save USD 22.85 dollars after selling cassava chips, as a group we plan produce on a daily basis after COVID19 lockdown” Faridah Namuli member of Sugu Agalyawamu Women group*

1 Mr. Ssekadde Peter explaining the importance of value addition <https://drive.google.com/file/d/1Xy28DmNabrRgA23CX7GqIkAl-zrIM9Rs/view?usp=sharing>

2 Training on usage of digital moisture content [https://drive.google.com/file/d/1v4Q3ohR0ll\\_tZec31pa4R6DhOeP26dme/view?usp=sharing](https://drive.google.com/file/d/1v4Q3ohR0ll_tZec31pa4R6DhOeP26dme/view?usp=sharing)

- ▶ **Retooling youth skills to fabricate communal solar dryer<sup>3</sup>**; willing young people were trained and managed to fabricate two communal solar dryers for agriculture produce and one for drying fuel briquettes. This work identified and retooled four innovative volunteerism actors to fabricate solar dryers which were distributed and installed in the communal solar drying centres in the Village savings and Loan association of Sugu Agalyawamu Women group in Buikwe district and Mukama Mulungi VSLA in Luwero district<sup>4</sup>. In addition, retooling youth skills aim at providing Knowledge, enhance skills and Values for employment, job creation and increasing their creativity and productivity in the reduction of post-harvest losses in rural Uganda. Furthermore, the fabricated dryer was an addition to the three solar dryers which were installed in the 3 VSLAs including Nakifuma VSLA in Mukono district, Nsonga VSLA and Ggera Fortune VSLA in Buikwe. The three VSLAs were supported with solar drying technology to enable reduction of post-harvest losses.



*Youth Innovative Volunteerism actor Waiswa Shylock fabricating a solar dryer*

- ▶ **Training on leadership, governance, and management of communal solar dryer centre VSLAs<sup>5</sup>**; Village savings and loans association were retooled to introduce management committees in the groups to enhance efficiency of activities of members. Committees established include solar dryer committee mainly to handle value addition of agricultural commodities grown by the group, Ecosystem based adaptation approaches committee this was established to enhance peer to peer training of members, committee for discipline. This work enabled introduction of leadership in Village savings and loans association for sustainability. This has helped VSLAs attain institutional capacity, decision-making structures, distribution of cost and benefits

3 Solar dryer fabrication; <https://drive.google.com/drive/folders/1eUmCnSM31TaSojYucNfJQGrcMHOzhR7?usp=sharing>

4 Fabrication of solar dryers at AYAI-Academy [https://drive.google.com/file/d/1eRsPLW0qJb\\_4nsBb9cxAbReN\\_XqYBF1W/view?usp=sharing](https://drive.google.com/file/d/1eRsPLW0qJb_4nsBb9cxAbReN_XqYBF1W/view?usp=sharing)

5 Training of Sugu Agalyawamu women group on leadership and value addition <https://drive.google.com/drive/folders/1zQZGWKQOtS-NJU7OnQZ48PCUANw9M4Lg?usp=sharing>

Table 1 Number of members trained in leadership, governance and management and gender representatives on VSLA committees

	Total number of men and women who received the training		Number of women on solar dryer committee		Number of men and women on EBA-Approaches committee		Number of Men and women on the discipline committee		Number of women and Men on the leadership of the VSLAs	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Village Savings and loan association trained</b>										
<b>Sugu Agalyawamu women group</b>	13.3%	86.6%	1	4	1	4	3	2	2	6
<b>Mukama Mulungi VSLA</b>	53.4%	46.6%	3	2	3	1	1	0	4	6
<b>Twekembe Women group Nakifuma VSLA</b>	6.6%	96.6%	0	5	0	5		2	1	4
<b>Ggera Fortune Women group</b>	13.3%	43.3%	1	4	0	6	1	0	3	3
<b>Nsonga VSLA</b>	16.6%	83.4%	2	8	2	3	2	2	3	4

- ▶ **Decentralisation of dryer for community use through establishment of communal solar drying technology to village savings and loans associations<sup>6</sup>**; to enhance affordability and accessibility of the solar dryers, the youth whose skills were retooled developed and decentralised solar dryers for communal use among the community trained in postharvest handling using solar dryers. Two VSLAs received the solar dryer including Mukama Mulungi VSLA and Sugu Agalyawamu Women group. For example, Sugu Agalyawamu Women group members were losing on vegetables. The introduction of value addition training on vegetables of Africa egg plants, Nakatti and cassava opened the farmers to increase on their production<sup>7</sup>.

*“Vegetables mainly Africa egg plants are left in the garden to decay because of the low prices paid to us by middlemen, a 50 kilograms’ sack of eggplant cost USD 3 dollars. Yet when I added value on the egg plants using a solar dryer and pack the egg plants in power form of 50grams will enable me gain USD 14.29 dollars. The communal solar dryer given to us by EBAFOSA Uganda is an opportunity to start drying crops and stop selling fresh vegetables to traders who cheat us”*

6 [https://drive.google.com/file/d/1nDs\\_3-YzGUeaLKeF7DQhi1sXupD50sBK/view?usp=sharing](https://drive.google.com/file/d/1nDs_3-YzGUeaLKeF7DQhi1sXupD50sBK/view?usp=sharing)

7 Mr Peter Ssekadde explaining how EBAFOSA has installed five solar dryer <https://drive.google.com/file/d/1m0tHeqHrr4XcHqaMwAtB49OJE0C-wtFv/view?usp=sharing>



*VSLA members spreading grated cassava chips on the solar dryer trays*



*Sugu Agalyawamu Women group exhibiting agricultural produce dried using communal solar dryer*

- ▶ **Implementation of the US 2241:2020; Climate action market incentives for agro-industrialization – Compliance guideline<sup>8</sup>.** Agro-value chain actors were trained on how to use this Uganda national standard guideline that fosters climate resilient production and value addition. This guideline is premised on the need to create a market driven incentive to combat climate change by maximizing productivity of catalytic sub-sectors. Farmers were trained to put the standard into action, and the cassava grown in the multiplication farmers followed this standard. The levels of compliance that actors were trained on include use of nature based EBA approaches for on-farm production (which also covers for organic); and the value addition module which centers on the use of accessible clean energy solutions, including solar dryers, for various levels of value addition.
- ▶ **Linking different value chains to solar drying centres;** this work has enhanced VSLAs venture into the vegetable value addition by using communal dryers to enhance quality and hygiene and market<sup>9</sup>. VSLAs were trained to add value on vegetables and cassava<sup>10</sup>. Currently this work has managed to establish five communal drying centres including Sugu Agalyawamu women group, Mukama Mulungi VSLA, Ggera Fortune VSLA, Tweekembe Nakifuma women group, Nsonga VSLA located in Buikwe, Luwero and Mukonodistrict.

Value addition enterprises	Village Savings and Loans Association kilograms dried using communal solar dryer					Total
	Sugu Agalyawamu women group	Mukama Mulungi VSLA	Ggera Fortune VSLA	Tweekembe Nakifuma women group	Nsonga VSLA	
Cassava	250 kgs	550 kgs	300 kgs	600 kgs	200 kgs	1900
Vegetables	15 kgs	35 kgs	-----	-----	-----	50kgs
Pumpkins	-----	15 kgs	-----	-----	-----	15kgs

## IMPACTS

- ▶ **Adoption of solar drying technology;** this work has enhanced farmers and rural women agricultural crops producers in the village savings and loans association the communal solar dryers are established. The drying technology has enabled to significantly lessen post-harvest losses of perishable agricultural products. The VSLAs of Sugu Agalyawamu women group and Mukama Mulungi VSLA managed dehydrate their cassava to moisture content of below 12% which is recommended by Uganda National

8 <https://drive.google.com/drive/folders/1zQZGWKQOtS-NjU7OnQZ48PCUANw9M4Lg?usp=sharing>

9 Value addition training <https://drive.google.com/file/d/1Xy28DmNabrRgA23CX7GqIkAl-zrIM9Rs/view?usp=sharing>

10 Vegetable value addition <https://drive.google.com/drive/folders/1GsXAIYUsxqryhc3TyY5sCTfXE4eT18Bd?usp=sharing>

Bureau of Standard, the national body for standards. Rural women were put at Centre stage to enable the VSLAs co-operate around the solution of solar drying technology.

*“Out of the trainings received from EBAFOSA Uganda they made us courageous and confident to understand that poverty can be fought through group not working alone. Eight women have been singled out by the solar dryer committee head to handle cassava value addition without supervision and they find it comfortable. Our aim as a group is to be a value addition hub in Buganda kingdom”.*  
*Betty Gitta solar dryer committee leader*

*Potential gender considerations of various Cassava value addition practices*

Value addition practices	Gender Impact	Requirements for adoption of practice					
	Women's control of income from practice	Relative amount of time until benefits are realized	Potential for women to benefit from increased productivity	Female and youth labour availability	Female access to and control of land	Female access to value addition training	Female access to cash and ability to spend it
Ecosystem System based adaptation approaches	Low	High	High	High	Low	High	Low
Cassava processing conducted at the household level as well as within small-scale cooperatives,	High	High	High	High - Medium	Low	High	Low
Value addition training	High	Medium	High	Medium	Low	High	Medium
packaging, Marketing of the value added products	High	Low	Low	High	Low-Medium	Medium	Medium

- ▶ **Reduction of post-harvest losses from insects**, rodent, mold and fungi infections which affect agricultural produce. Drying of agricultural products for example cassava, pumpkins and Vegetables is complex when using direct sun drying. However, with the installation of a communal solar dryers in the VSLAs this has enable farmers to plan when to harvest their crops.

*“Agriculture traders buy our cassava at a low price were by one sack of cassava is bought USD 4.5 dollars, and they sell it at a range of USD 42.85 dollars in Kakasero Market in Kampala city, those traders don’t buy damaged, deformed and small cassava roots most of them are left in the garden to decay or given to animals, since we have got a solar dryer now we shall be able to sell cassava chips.” Beatrice Namussi Sugu Agalyawamu women group member.*

- ▶ **Increased access of women to communal solar dryers;** both men and women farmers easily access the drying centres to dry their agricultural produce. This work installed solar dryers in strategic locations which are accessible by women. The VSLAs supported by the communal solar dryers meet twice a week and as they are conducting saving activities, they as well conduct income generating activities such as drying agriculture value chain for cassava, vegetables and pumpkins. Three VSLAs were supported with the solar dryers

Village Savings and loan association trained	Number of members who accessed the solar dryer centre after the training		Number of non-VSLA members who accessed the solar drying centre		Number of VSLA members who dried from the solar drying centre		Number of members on the EBA-Practices committee		Number of women and Men on the leadership of the VSLAs	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Sugu Agalyawamu women group	13.3%	86.6%	--	2	1	4	3	2	2	6
Mukama Mulungi VSLA	53.4%	46.6%		5		1	1	0	4	6
Twekembe Women group Nakifuma VSLA	6.6%	96.6%		2		5		2	1	4
Ggera Fortune Women group	13.3%	43.3%			3	6	1	0	3	3
Nsonga VSLA	16.6%	83.4%				3	2	2	2	3

- ▶ **Ownership of the communal solar drying centres by the VSLAs members;** solar drying is one of the most effective and efficient and renewable energy and sustainable technique of dehydrating agricultural produce. Farmers were trained to own this technology and bring their agriculture produce to the centre. The centre enabled Sugu Agalyamawu women group and Mukama Mulungi VSLA co-operate around the solution of solar dryer, by dropping local method of open sun drying.

*“We have gained knowledge on cassava, pumpkins and vegetable value addition we expect to increase on our saving as a group, previous the VSLA has not been having incoming generating activities, EBAFOSA’s intervention has helped us think out of the box, as a group we expect to start packing pumpkin flour mixture with cassava flour, pumpkin flour with maize” Fred Mbayo chairperson Mukama Mulungi VSLA.*

- ▶ **Community resilience being improved** as demonstrated by their ability to use the communal solar drying technology and use knowledge to add value to cassava which is organically grown using ecosystem-based adaptation approaches of planting in lines, intercropping cassava with beans and maize, planting disease and drought resistant varieties. this has enabled VSLAs members respond to, withstand and recover from climate shocks and changing climatic patterns<sup>11</sup>.

*“Sugu Agalyawamu Women group has existed for 8 years, but we have never received training on agriculture commodity value addition yet our members are predominantly farmers who face the problem of post-harvest loses of agricultural produce on the gardens, during drying, and storage. EBAFOSA Uganda gave us a solar dryer and you can see now we are drying and producing clean cassava chips. We expect to start making pancakes, bagiya, doughnuts from our own cassava. They have taught us to also add value on vegetables like Africa egg plants, nakatti, we learnt that we cannot rely on money given to us by our husbands to save in the VSLAs, we now have income generating activities and received financial training from CBS-PEWOSA Cooperative” Zaina Namuli Chairperson –Sugu Agalyawamu Women group in Buikwe district.*

- ▶ Increased access to stable, reliable and affordable renewable energy; access to affordable, reliable solar drying technology is critical to agro processing of agricultural commodities which are perishable<sup>12</sup>. Were trained to use a solar dryer and pay maintenance fee UGX 100 per kilogram dried using a solar dryer.
- ▶ **Increased food and nutrition security of house households belonging to the VSLA members.** The value addition training n vegetables and pumpkins enabled the mother to feed on the vegetables and pumpkin flour due its nutrition benefits and members plan to start packing pumpkin powder for porridge for adults and infants. This will be boosted with the one acre of pumpkins grown by the VSLA of Mukama Mulungi VSLA which is one month old.
- ▶ Increased knowledge on value addition for pumpkins, vegetables and cassava.
- ▶ Youth skills retooled to fabricated solar dryer to help in dehydration of agriculture produce and also managed to fabricate a solar dryer for mainly to dry fuel briquettes<sup>13</sup>.

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11 Cassava and vegetable value addition for Sugu Agalyawamu women group <https://drive.google.com/drive/folders/1GsXAIYUsxqrvhc3tYy5sCTfXE4eT18Bd?usp=sharing>

12 Visit to Tweekembe women group Nakifuma <https://drive.google.com/file/d/17K9DAhilwolyXGYhjkAG0u1e1ECPV0F/view?usp=sharing>

13 Testimonial from youth fabricating solar dryers <https://drive.google.com/file/d/1YfHB3ddMKFjX5jY1k08BqdRmWoPAQW0I/view?usp=sharing>

## CONCLUSION

Value-addition simply refers to the additional value created at a particular stage of production or through image and marketing. Value addition in agriculture is a process of increasing the economic value and consumer appeal of an agricultural commodity.

### Summary of the impact and the next steps

INVENTIONS	IMPACTS
Establishment of communal solar drying technology to village savings and loans associations	Adoption of solar drying technology
Linkages of Village savings and loans associations to financial cooperative of CBS-PEWOSA cooperative;	Community resilience being improved
Conducting agricultural produce value addition for vegetables, pumpkins, and cassava	Increased access of women to communal solar dryers
Retooling youth skills to fabricate communal solar dryer	Adoption of solar drying technology
Training on leadership, governance and management of communal solar dryer centre VSLAs	Increased access to stable, reliable and affordable renewable energy
Implementation of the US 2241:2020; Climate action market incentives for agro-industrialization — Compliance guideline.	Increased food and nutrition security of house households belonging to the VSLA members.
Linking different value chains to solar drying centres	Reduction of post-harvest losses

### Village savings and loans association members who benefited from the training

Gender disaggregation needs to show the beneficial impact.	Village savings and loans associations gender disaggregated data									
	Sugu Agalyawamu Women group		Nsonga VSLA		Twekembe Women group Nakifuma		Ggera Fortune		Mukama Mulungi VSLA	
	Women	Men	Women	Men	Women	Male	Women	Male	Women	Men
Value addition training	26	4	10	3	25	-	6	2	15	10
Adoption of solar drying technology	20	6	5	2	9	-	6	2	15	8

Increased access of women and men to communal solar dryers	26	4	10		20	1	13	1	15	10
Increased food and nutrition security of house households belonging to the VSLA members.	5	2	20	2	20	-	5	2	10	10
Reduction of post-harvest losses	20	2	15	3	26	1	5	1	10	5

Matrix table to show the measurable impacts of the training of Village savings and loans association members on use of solar dryers.

Measurable impact seen through observation, visits, trainings	Village savings and loans association which received training				
	Sugu Agalyawamu women group	Nsonga VSLA	Twekembe Women group Nakifuma VSLA	Ggera Fortune Women group	Muakama Mulungi VSLA
Target Farmers who have adopted the technology of solar drying	<p>76.9% of women farmers have adopted the technology of solar drying</p> <p>23.1% of men have adopted the solar drying technology</p> <p>Before this intervention in the targeted VSLAs they used to dry agricultural inputs on polythene bags, rooftops and bear ground.</p>	<p>16.6% target women farmers adopted the solar drying technology</p> <p>6.6% target men farmers adopted the solar drying technology</p> <p>Before the community was didn't have the solar drying technology i.e the group used tarpaulins to dry cassava</p>	<p>29% of target women adopted the solar dryer and dry their food in shortest time possible</p> <p>Before this intervention target farmers were using open sun drying</p> <p>Women dominate the cooperating around the solution of solar dryer technology</p>	<p>35.3% use the solar dryer to dry cassava and other crops</p> <p>12% of know how to use the solar dryer and engage in maintenance of the dryer</p>	<p>At least 50% of target women accepted the solar dryer and started using to dry cassava, pumpkins and vegetables</p> <p>34% of target VSLA men accepted the solar dryer and started helping women to dry cassava, pumpkins and vegetables</p>

Measurable impact seen through observation, visits, trainings	Village savings and loans association which received training				
	Sugu Agalyawamu women group	Nsonga VSLA	Twekembe Women group Nakifuma VSLA	Ggera Fortune Women group	Muakama Mulungi VSLA
Target women and men farmers who accessed the communal solar dryer	86.6% of target women farmers have accessed the solar dryer centre  13.4% of target men farmers have accessed the solar dryer centre  45% of targeted farmers both men and female were found growing cassava and vegetables	33.3% of target women accessed the solar dryer centre	64.5% of women access the solar drying technology  3.3% men access the solar dryer centre  At Least 64.5% of women engage in the drying of cassava on weekly basis.	76.5% of target women access the solar dryer centre and use it to dry agricultural crop  At least 6% of men of target VSLA access the dryer and have knowledge on how to use it .	50% target women access the solar dryer centre and dry cassava, pumpkins and vegetables  34% of target men access the dryer and dry cassava , pumpkins, vegetables
Target farmers Increased food and nutrition security of households belonging to the VSLA members.	16.6% of women target farmers of VSLA increased on knowledge on good diet, importance of vegetables.  6.6% of target farmers of men increased knowledge on good diet, importance of vegetables  23.2% of target farmers at least plan to grow cassava on their person land	66.6 % target women increased knowledge on nutrition crops like beans they planted  6.6% of men acquired knowledge on importance food security , nutrition crops  At 80% of the farmers are ready to plant cassava on their personal land and dry it using solar dryer	66.6% of women improved the knowledge on food security and importance of planting cassava  At least 66.6% of women acquired skills of drying food to increase its shelf life	At least 29.5 % of target women of the VSLA plant cassava of 5 acres as group. Women have knowledge on importance of storing food to be utilized using crisis like pandemics  At least 12% of men of target VSLA understand the importance having enough food at home and knowledge on storing food in clean bags .	34% target women acquired knowledge on adding value on vegetables using a solar dryer for children diet  34% target men acquired knowledge on adding value on vegetables using a solar dryer for children diet

Measurable impact seen through observation, visits, trainings	Village savings and loans association which received training				
	Sugu Agalyawamu women group	Nsonga VSLA	Twekembe Women group Nakifuma VSLA	Ggera Fortune Women group	Muakama Mulungi VSLA
Farmers trained post-harvest handling	<p>At least 66.6% of target women farmers bring their cassava on the solar dryer centre to add value.</p> <p>73.2% of target farmers received training on value addition of cassava and vegetables</p> <p>73.2% of the target farmers have knowledge on reduction of post-harvest losses. i.e. harvesting on time, using solar dryer, tight bags storage.</p> <p>73.2% of target farmers have reduced losses of cassava and vegetables.</p>	<p>At least 50% of target women use the solar dryer to dry their cassava</p> <p>At least 10% target men use the solar dryer to prevent their cassava from decaying</p> <p>Before this intervention target farmers were drying open sun drying i.e using polythene bags , tarpaulins and raised grounds</p>	<p>71% of women target farmers conducted the PHH practices, maintaining quality and extending shelf life of the cassava chips after harvest</p> <p>At least 3% of men by the target VSLA acquired knowledge on post-harvest handling</p> <p>Before this training farmers didn't have any knowledge of solar dryer and post-harvest handling techniques.</p>	<p>29.5% of target women farmers have increased knowledge on post-harvest handling</p> <p>6% of target male famers participated in Postharvest handling technology.</p> <p>Before the training farmers were drying cassava on bear ground, rooftops, harvesting crop very late and storage was poor.</p>	<p>34% target women acquired skills in reduction of post-harvest losses of improving quality of cassava , vegetables and pumpkins</p> <p>16% target men acquired skills in reduction of post-harvest losses of improving quality of cassava , vegetables and pumpkins</p> <p>100% of the VSLA staff and leaders demonstrate knowledge of at least three skills in which they were trained</p>

## NEXT STEPS

- ▶ Packaging and marketing training for VSLAs members on value added enterprises of cassava, pumpkins and vegetables.
- ▶ Improving designs of solar dryers.
- ▶ Linking VSLAs to markets
- ▶ Identifying new CBS-PEWOSA VSLAs to be trained on value addition
- ▶ Conduct peer to peer field visit for the VSLAs members/ exchange tour for members.
- ▶ Continuous data gathering on the performance of the solar dryer

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## APPENDICES

Cassava value addition training [https://drive.google.com/file/d/16dN-90H74clHcH4fM1dy2ExuJLF-s\\_wY/view?usp=sharing](https://drive.google.com/file/d/16dN-90H74clHcH4fM1dy2ExuJLF-s_wY/view?usp=sharing)

David Luganda explaining how solar dryers are distributed to VSLAs <https://drive.google.com/file/d/1iSzrp5CevFnV-KkdfzRMrqOYJRfv6GV/view?usp=sharing>

[https://drive.google.com/file/d/1eRsPLW0qjb\\_4nsBb9cxAbReN\\_XqYBF1W/view?usp=sharing](https://drive.google.com/file/d/1eRsPLW0qjb_4nsBb9cxAbReN_XqYBF1W/view?usp=sharing)

Women of Tweekembe women group Nakifuma adding value on cassava

[https://drive.google.com/drive/folders/1rZieXo00Ahm\\_f9LS06KWwXph03ZJU-39?usp=sharing](https://drive.google.com/drive/folders/1rZieXo00Ahm_f9LS06KWwXph03ZJU-39?usp=sharing)

## ANNEX

### List of Village savings and loans association trained by EBAFOSA Uganda.

Village savings and loans association members who have received value addition training				
Mukama Mulungi VSLA located in Luwero district – Kalungu village				
Number	Name of members	Gender		Phone Number /contacts
		Male	Female	
1	Segujja Geoffrey	Male		778454361
2	Sebuliba Paul	Male		780783856
3	Kiyeya partruck	Male		782101577
4	Sauya Najjuma		Female	774953903
5	Lubega Steven	Male		784539348
6	Edward Gitta	Male		772461570

<b>Village savings and loans association members who have received value addition training</b>				
<b>Mukama Mulungi VSLA located in Luwero district - Kalungu village</b>				
<b>Number</b>	<b>Name of members</b>	<b>Gender</b>		<b>Phone Number /contacts</b>
		<b>Male</b>	<b>Female</b>	
7	Bettu Gitta		Female	789108624
8	Semakula Irine		Female	778186785
9	Harriet Kakiryoy		Female	774252900
10	Fredrick Kakiryoy	Male		777800233
11	Ndawula Nuruh		Female	776758163
12	Anold Sembuuze	Male		772040037
13	Nakawesa Allen		Female	781381624
14	Nanjobe Christine		Female	708137514
15	Sentumbwe patrence	Male		782567787
16	Nassezi Joweria		Female	708208575
17	Namitala Sarah		Female	788242635
18	Mbaizi Gerald	Male		776932518
19	Mubiru Rechard	Male		752607713
20	Muwonge Aida		Female	774799210
21	Namagembe spe		Female	751619541
22	Mwinike Rhona		Female	782786821
23	Naglunga Pheobe		Female	789108624
24	Kyando Salm	Male		788303579
25	Naggayi Margaret		Female	
26	Sewinabo Micheal	Male		
27	Senwagi Saul	Male		708816214
28	Wandera Moses	Male		
29	Chance William	Male		
30	Fred Mbayo	Male		
<b>Twekembe Women's Group Nakifuma located in Mukono district- Nankulabye village</b>				
31	Ssesanda Trevor	Male		0700719034/0771469471
32	Kisakye Harriet		Female	753382733
33	Naiwumbwe Zaituna		Female	705368679
34	Nakiwala Faitha		Female	778934522
35	Nakiyemba Juliet		Female	708726101
36	Namugamba .M. Immy		Female	700719435
37	Namugambe Angella		Female	705938802
38	Namande Jane		Female	755064020

<b>Village savings and loans association members who have received value addition training</b>				
<b>Mukama Mulungi VSLA located in Luwero district - Kalungu village</b>				
<b>Number</b>	<b>Name of members</b>	<b>Gender</b>		<b>Phone Number /contacts</b>
		<b>Male</b>	<b>Female</b>	
39	Nambi Ruth		Female	706762023
40	Najjuuko Jane Francis		Female	757372152
41	Nagmugambe Angela		Female	757326499
42	Namirembe Hadijja		Female	700971031
43	Eva Maalo		Female	700971031
44	Nuulu Kyaanda		Female	704300497
45	Annet Wagumba		Female	784933185
46	Namusisi Janat		Female	
47	Mayombwe Nakanjako		Female	
48	Ijumba Deborah		Female	
49	Lumala Millian		Female	
50	Nankumba		Female	
51	Mrs. Kisuule		Female	
52	Mrs. Magamba		Female	
53	Nkuusi Poline		Female	
54	Nalwanga Shakirah		Female	779683967
55	Kigenyi Andrew		Female	786437130
56	Babirye Zawedde		Female	
57	Babirye Nakabira		Female	
58	Namuli Esza		Female	
59	Nalwoga Shamim		Female	
60	Nalujja Sawuba		Female	
<b>Ggera Village savings and loans association located Buikwe district - Ggera village</b>				
62	Nakabogo Betty		Female	770571132
63	Bakanansa Keti		Female	703492047
64	Alibakiriza Recheal		Female	
65	Nasanga Goretti		Female	701758366
66	Nabulime Catherine		Female	706667483
67	Nakonde Priscila		Female	
68	Nanyonga Annet		Female	774479730
69	Kayiga Geoffrey	Male		751370746
70	Bengo Moses	Male		706977294
71	Nansubuga Betty		Female	703298015

<b>Village savings and loans association members who have received value addition training</b>				
<b>Mukama Mulungi VSLA located in Luwero district - Kalungu village</b>				
<b>Number</b>	<b>Name of members</b>	<b>Gender</b>		<b>Phone Number /contacts</b>
		<b>Male</b>	<b>Female</b>	
72	Nakabogo Betty		Female	770571132
73	Namiya Harriet		Female	
74	Luutu David	Male		
75	Namutebi Justine		Female	
76	Namuddu Mariam		Female	
77	Ssempebwa Julius	Male		
78	Nakandi Lydia		Female	
<b>Sugu Agalyawamu Women Group located in Buikwe district - Sugu village</b>				
80	Nambi Ruth		Female	756331123
81	Nansubuga Milly		Female	788374582
82	Rwantare Sarah		Female	788242184
83	Nakinsige Nuulu		Female	758836279
84	Naiga Nuayati		Female	703950369
85	Namuli Faridah		Female	785460993
86	Nabuma Sawuda		Female	704313742
87	Najjemba Nuulu		Female	701234847
88	Mutesi Nuulu		Female	708023157
89	Najjemba Azzena		Female	774307712
90	Mutesi Jowelia		Female	754135663
91	Nabatanzi Fatina		Female	758636711
92	Nankanja Safina		Female	781936295
93	Namubilu Madinah		Female	753221764
94	Nalwoga Abiba		Female	788127774
95	Nazziwa Annet		Female	759125361
96	Namusisi Beatrice		Female	774504187
97	Bagara Aiddah		Female	778109210
98	Kayya Derick	Male		779644339
99	Nayima Molini		Female	751911137
100	Ssebadduka Ibrahim		Male	753362261
101	Namwanje Jalia		Female	
102	Bisaso Hakim	Male		
103	Muwanika Kalimu	Male		
104	Nakalyowa Faridah		Female	

<b>Village savings and loans association members who have received value addition training</b>				
<b>Mukama Mulungi VSLA located in Luwero district - Kalungu village</b>				
<b>Number</b>	<b>Name of members</b>	<b>Gender</b>		<b>Phone Number /contacts</b>
		<b>Male</b>	<b>Female</b>	
105	Namutebi Jane		Female	
106	Naantogo Jalia		Female	
107	Namugenji Shadia		Female	
108	Nakafu Sophia		Female	
<b>Nsonga Village Saving Loans and Association list located in Mukono district - Nsonga, Katwe, Lugala villages</b>				
109	Birungi Agnes		Female	0756751213/0774901104
110	Nolla Male			0751898731
111	Ssekamatte Ronald		Male	0751543150
112	Wanyale Abdulatif		Male	0756660661
113	Nabayego Annet		Female	
114	Namutebi Oliver		Female	0755029071
115	Akia Sarah		Female	
116	wanbowa Tracy		Female	
117	nakafu Trinity		Female	
118	mbekeka Josephine		Female	
119	Nakame Mariam		Female	0759122948
120	Katerega Mastula		Female	0752417285
121	Katerega Faridah		Female	0753139898
122	Nakate Daisy		Female	0702154814
123	Nakiyinja Catherine		Female	
124	Mirembe Gertrude		Female	
125	Nantongo Florence		Female	
126	Nakazzi Madinah		Female	
127	Nakityo Eve		Female	
128	Namutoosi Jalia		Female	
129	Namuswe		Female	
130	Ndagire Lukwago		Female	
131	Nakasagga Victoria		Female	
132	Lule Agnes		Female	
133	Nakafu Edith		Female	
134	Nampeera Jacinta		Female	

<b>Village savings and loans association members who have received value addition training</b>				
<b>Mukama Mulungi VSLA located in Luwero district - Kalungu village</b>				
		<b>Gender</b>		
<b>Number</b>	<b>Name of members</b>	<b>Male</b>	<b>Female</b>	<b>Phone Number /contacts</b>
135	Ssalonga Mayanja	male		0782449982
136	wasswa Henry	male		
135	kato Daniel	male		
137	kiwmbi Ahmed	male		
138	serwanga Rajab		Female	
139	Namutale Justine		Female	



**EBAFOSA**

Ecosystem Based Adaptation for  
Food Security Assembly



[info@ebafosa.org](mailto:info@ebafosa.org)



P.O Box 30552 00100  
Nairobi  
Kenya

[WWW.EBAFOSA.ORG](http://WWW.EBAFOSA.ORG)