A TWO DAY FIELD TRIP AT BIRIM SOUTH DISTRICT IN THE EASTERN REGION, GHANA.

DATE: 19TH-20TH SEPTEMBER 2020.

Introduction:

The concept of Innovative Volunteerism stems from the passion to harness the collective human capital of an individual, a country or a continent triggered by purpose-driven actions as the premium to build mutually beneficial and complementary partnerships with the end goal of closing gaps along the agro-value chain by sustainably industrializing it using clean energy (Munang, R., 2018).

Inherent in this model is the need for communal spirit and teamwork. In Ghana, the EBapreneur Solutions Ghana leads the Innovative Volunteerism under broader Ecosystem Based Adaptation for Food Security Assembly (EBAFOSA) initiative.

A volunteer of EBapreneur Solutions Ghana undertook a two-day community reconnaissance at Birim South District in the Eastern region between 19th and 20th September, 2020. The meeting sought to undertake a needs assessment to identify proposed communities suitability as beneficiaries of the EBAFOSA Innovative volunteerism initiative.

Community members organized durbar sessions in each of the communities visited.

In attendance, included: Mr. Isaac Y. Barnes, the volunteer, Mr. Nana Turkson and Mr. Rafiu Kipo the Planning and HR officers at Birim South District Assembly respectively. In addition, some dignitaries present included the Assembly members of each community, [the elected local government representative], chief farmers and the chief of Akotekrom [highest traditional leader].

Study area

The team visited four communities namely: Abadjan, Adiembra, Adinkrom and Akotekrom against the six communities initially identified.

The result of a heavy rainfall on Saturday, 19th September 2020 informed the decision to settle on these four communities. The rainfall situation made roads to the other communities inaccessible.

Community Entry engagement/ Community demographics

In all the communities visited, we adopted a gender inclusive approach to ensure that the views of men and women are well captured. The table 1 shows some community members present.

Table 1: Participants in the three communities visited

No.	Community	Sex				Total
		Male	Percentage (%)	Female	Percentage (%)	
1.	Abadjan	19	68	9	32	28
2.	Adiembra	13	65	7	35	20

3.	Akotekrom	14	66	7	33	21
4	Adinkrom	16	73	6	27	22

Source: Field data (2020)

The team adopted an interactive dialogue to understand the concerns facing farmers. As such, the team identified farmers by unique codes to capture their farm data. The information captured included: the types of crops cultivated and the acreage farmed. In addition, estimates in both monetary value and volumes cultivated (kg) were determined to assess the post-harvest losses. Farmers subsequently identified some challenges they face in their daily operations and proposed solutions. The Table 2, 3, 4 and 5 in Appendix 1 provides detailed information on communities data gathered and the estimated post-harvest losses.

Community Challenges

All the communities visited had unique challenges. This paper rather focused on the crosscutting themes identified from each community. This included but not limited to poor storage facilities, lack of ready market and unpredictability of rainfall pattern.

- Poor storage facilities.

Among the top challenges identified in all the communities are the lack of efficient drying and poor storage facilities. During bumper harvest, the lack of an efficient drying and storage facilities forces farmers to sell their produce at very cheap prices. The reason being, most farm goods perish within short lifespan without proper preservation: drying and storage facility.

However, after a month or two, prices of these same goods rises during the lean season. Farmers are unable to take advantage of the higher prices because, farmers either are out of stock of their farm produce or are recording high post-harvest losses on stored farm goods.

A farmer lamented and shared his ordeal when asked why farmers sell their goods at cheap prices during the bumper harvest. He stated, "during the bumper harvest period, there are excess goods such as maize, cassava, or plantain in the market. The situation forces us [farmers] to reduce our prices if we [farmers] want customers to buy our produce quickly. Just within two or three month after, these farm produce [maize, cassava, plantain etc] are in short supply [describing the state of the lean season]. The prices begin to rise. A bag of maize sold at GH¢70 during the bumper harvest can be sold at GH¢120 [$1=gh¢5.8]. The challenge is, the risk to wait patiently until this time are very high. All your maize gains can spoil. I can show you mine. I lost everything. Waiting to take advantage during the lean season is like gambling. You either sell quickly and get money to plant again or wait and get nothing at all." The current situation results from the drying and storage methods being adopted.

Communities members shared series of personal accounts at all visited sites. It is risker and catastrophic to desire to wait beyond the bumper harvest sales. The Figure 5 shows the drying methods adopted in some communities visited.


Figure 2: Different local drying schemes

In addition, the means of drying these tuber crops and cereals exposes these foodstuffs to unwholesome conditions. Foodstuffs dried are done in the open and lacks the proper protection. The condition causes a potential threat to human health to end users.

It was also evident that foodstuffs takes relative longer to dry. The unpredictability in the weather patterns further increases the post-harvest losses. The interaction with the communities therefore highlighted the urgent need to support these communities with an efficient and effective means to dry their farm produce. Such an intervention will prolong the shelve life of farm produce, reduce post-harvest losses and improve rural farmers financial conditions.

- Lack of ready market and unpredictability of climate change

Farmers within the communities visited also face the challenge of ready market for some of their farm produce such as cassava. The lack of ready market and subsequent high post-harvest losses disincentivized farmers to cultivate such root crops on large scale. To this end, an appeal to support farmers with ready market will boost their capacity to cultivate such crops on large scale.

Firewood remain as the predominant source of fuel in all communities visited. This implied communities' excessive demand for tree logging. Communities were therefore educated on the current climatic changes and the role of trees. Communities were admonished to reduce their dependence on tree.

The alternative approach introduced to the community was the briquette. Understanding the direct impact of climate change on their everyday lives, community members agreed to support in any means to make the project a success.

Discussing the Agro-value chain actors

All the communities visited had a cooperative body with well-structured leadership regulating members operation along the cocoa value chain. No cooperative body existed along other crop value chain such as maize and cassava. Communities proposed to form a new cooperative body for other farm produced value chain such in the groups between 12 and15 or broaden the scope of existing formal cocoa cooperatives to focus on other farm produce. After deliberation, community members agreed to form new cooperatives with identified leaders to sphere head the implementation of this project. This was done to ensure regular financial contributions of community members are done in an organized, transparent and accountable manner. In all communities visited, the new cooperative are yet to be formed and their respective leaders yet to be elected.

Volunteering landscape for the installation of solar dryers

Community members present were adequately informed on the need to volunteer a land space for the installation of the solar dryers. All the communities pledged their commitment to volunteer adequate and suitable land space for the installation of the facility. At Adiembra and Abadjan, the communities needed to solicit the consent of the chief on the proposed land space identified. This is in line with community members observing customary practices. At Akotekrom, the chief was present at the meeting. He pledge his buy-in to dedicate any land for the intervention. In all the communities, community members were eager to know about the installation capacity of the solar dryers. The volunteer assured the community that the solar dryer capacity was based on standard that was large enough to meet their needs.

The communities agreed to contribute in either cash or kind (farm produce) to ensure the operational sustainability of the installed solar dryers.

Conclusion and recommendation

All communities visited recorded high post-harvest losses other than rice and cocoa. These high losses is attributed to the lack of efficient drying and storage facilities. The unpredictability in rainfall patterns further worsens the challenge. The situation poses a high vulnerability risk for rural farmers.

The intervention of solar dryers, therefore, will reduce post-harvest losses and create wealth for rural farmers. Subsequently, the end value of turning waste into briquette will also reduce rural communities' dependence on wood for domestic fuel.

The following recommendation are suggested for consideration:

- Secure buy-in of community members on value addition solutions with focus on communal spirit and team work.
- It was evident that farmers lacked adequate data collection tools to assist track their value chain investments. I therefore recommend farmers form a communal structured cooperative as the unit of accountability and traceability. The capacities of these cooperatives will subsequently be developed to keep basic records.
- Moving forward, the role of the chiefs must be limited to promoting the idea of communal spirit and team work to secure communities buy-in.
- This solar dryers can be used as a platform to help create a data portal to support farmers develop a structured data. To this end, I propose we build the capacity of people to support with data records of the quantities of farm produce brought to the facility.

Reference

Ghana Statisitcal Service (2014). 2010 Population and Housing Census. District Analytical report. Birim South District.

Munang, R., (2018). *Making Africa Work Through the Power of Innovative Volunteerism*. AuthorHouse

Appendix I

Table 2: Community data at Adiembra community.

Communities			Acrea of Crops Farmed					
No	Name	Contact		Acrea of Crops Farmed	**BAGS HARVESTED**	**MARKET VALUE**	**AMOUNT THAT GET LOST (KG)**	**LOSE IN MONETARY VALUE**
1	Asare Kwakye	242615010	Maize	2.5	10	500	2	100
2	Peter Nuamah	558780657	Maize	3	15	900	3	180
			Cassava	1	6	480	0	
3	Gbese Emmanuel	591411242	Maize	2	8	360	2	90
			Cassava	2	5	400	1	80
4	Ayim Magret	246859645	Maize	1	6	390	1	65
			Cassava	1	4	320	1	80
5	Janet Asumaning	556659168	Maize	1	5	275	1	55
			Cassava	1	4	300	1	75
6	J.K Frimpong	541463663	Maize	4	32	1760	4	220
			Cassava		24	1920	3	240
7	John Appianing	540417262	Maize	1	3	165	1	55
8	Yaw Konto	551708138	Maize	3	16	960	4	240
			Pepper	0.5	3	120	1	40
			Cassava	1	5	400	1.5	120
9	Joseph Mensah	204319357	Maize	2	10	550	2	110
			Cassava	2	5	400	2	160
10	John Pinkra	276177298	Maize	3	18	900	2	100
			Pepper	1	3	120	0.5	20
			Cumcumber	2	7	595	1	85
11	Abena Amoakoa		Maize	2	7	385	1	55
			Cassava	2	6	480	1	80

12	Augustina Kwafo		Maize	4.5	35	1925	3	165
			Pepper	2	6	270	2	90
			Cassava	2	20	1600	2	160
13	Comfort Amoako	549895715	Maize	2	15	825	2	110
			Cassava	1	10	800	3	240
14	Yaa Nuamah	547477478	Maize	1.5	10	550	2	110
			Cassava	1.5	9	720	2	160
15	Faustina Asiedua	242983611	Maize	2	16	880	2	110
			Cassava	2	12	960	4	320
16	Thomas Boakye	247848903	Maize	2	12	660	2	110
			Cassava	1	7	560	1	80
17	Akwetey Joseph	546306052	Maize	3	15	825	4	220
18	Sampson Ofeh	545104893	Maize	1.5	8	440	2	110
			Cassava	1.5	6	480	2	160
19	Ebenezer Gysei	554358961	Maize	3.5	27	1620	4	240
			Cassava	2	12	960	5	400
			Cumcumber	2	19	1615	3	255
20	George Ofosu	246257293	Maize	5	37	2035	13	715
			Cumcumber	3	21	1785	4	340

Table 3: Community Data at Abadjan

Communities			**Acrea of Crops Farmed**					
No	Contact	Name			**BAGS HARVESTED**	**MARKET VALUE**	**AMOUNT THAT GET LOST (KG)**	**LOSE IN MONETARY VALUE(GHc)**
1		Yaa Amoawa	Rice	3	37	14800	10	4000
			Cassave	1	9	720	4	320
2	55883596	Akua Ackomaa	Maize	1	8	560	3	210
			Cassava	0.5	6	480	3	240
3		Comfort Donkoh	Maize	1	7	490	2	140
			Cassava	0.5	8	640	2	160
4		Kpotoh Elizabeth	Maize	2	10	700	3	210
			Rice	2	10	4000	4	1600
			Cassava	1	10	800	3	240
5	592815191	Martha Quaisoa	Maize	1	8	560	2	140
			Rice	1	17	6800	7	2800
			Cassava	1	7	560	3	240
6	245621823	Edward Nikoi	Maize	4	25	1750	2	140
			Cassava	4	30	2400	15	1200
7	244902231	Joseph Akyemfo	Maize	2	8	560	2	140
8	248082605	Victoria Ayegyi	Maize	1	8	560	3	210
			Beans	2	16	1040	3	195
			Cassava	1	12	960	5	400
			Rice	2	20	8000	4	1600
9		Kwame Donkoh	Maize	2	20	1400	1	70
			Cassava	1	30	2400	15	1200
10	549653683	Odoom Daniel	Maize	4	17	1190	10	700
11	541132941	Aluka Nteh	Maize	2	20	1400	3	210
			Cassava	4	15	1200	4	320
12		Samuel Agya	Maize	1	8	560	2	160

			Cassava	0.4	6	480	3	240
13	242992235	Kwame Appiah	Maize	2	15	1050	2	140
			Rice	1	20	8000	4	480
			Cassava	2	15	1200	2	160
14	55794753	Ekua Hawa	Maize	0.5	4	280	1	70
			Rice	2	10	4000	2	240
			Cassava	0.5	5	400	2	160
15	553794726	Kwadwo Dadze	Maize	1	8	560	1	70
			Rice	2	22	8800	2	800
16	591411435	Mercy Kumi	Maize	1	15	1050	2	140
			Rice	2	25	10,000	3	1200
			Cassava	1	12	960	2	160
17	542898236	Adwoa Foriwaa	Rice	1.5	16	6400	5	2000
18	543123700	Kpoto Kwasi	Maize	1	15	1050	2	140
			Cassava	1	15	1200	3	240
19	555488184	Kwasi Mark	Maize	2	18	1260	2	140
			Rice	2	30	12000	3	1200
			Beans	1	3	195	0.5	32.5
			Cassava	1	15	1200	1	80
20	55228577	Ebenzer Oppong	Maize	3	35	2450	3	210
			Cassava	1	10	800	2	160
23	549522068	ROSE ACKON	Rice	1	12	4800	7	2800
24	592858347	Samuel Appiah	Maize	3	15	1050	5	350
25	553794726	Kojo Dadzie	Maize	4	16	1120	4	280
26	558292644	Francis Ayegyi	Maize	2	9	630	2	140
27	558869867	Kwabena Akyemfo	Maize	2	8	560	1	70
28	0545294573	Belinda Nyarko	Rice	1	8	3200	2	800

Table 4: Community data at Akortiekrom

Communities			**Acrea of Crops Farmed**					
No	Name	Contact		Maize	**BAGS HARVESTED**	**MARKET VALUE**	**AMOUNT THAT GET LOST (KG)**	**LOSE IN MONETARY VALUE(GHc)**
1	Samuel Owusu	0248278648	Maize	1	29	1450	4	200
			Cassava	1	20	1600	6	480
2	Samuel Kwadwo Owusu		Maize	6	40	2800	15	1050
			Cassava	3	30	2400	15	1200
3	Tetteh Isaac		Maize	2	10	700	7	490
4	Addae James		Cassava	1	5	400	0.5	40
5	Nana Agyiri Akoto		Maize	5	30	2100	10	700
			Cassava	2	9	720	2	160
6	Hon. Andrews Opoku		Maize	3	78	3900	40	2000
			Cassava	1	12	960	6	480
7	Thomas Kofi Larbi	0552652612	Maize	2	34	1700	12	600
			Cassava	1	12	960	6	480
8	Mary Akuffo Asor		Maize	1	6	420	3	210
			Cassava	0.5	4	320	2	160
9	Isaac Nyarko		Maize	2	10	700	4	280
			Cassava	1	6	480	2	160
10	Twum Mark		Maize	4	22	1540	4	280
			Cassava	2	40	3200	20	1600
11	Solomon Eduffo		Maize	3	15	1050	5	350
			Cassava	1	5	400	2	160

12	Beatrice Agoba		Maize	1	7	490	0.5	35
			Cassava	1	15	1200	5	400
13	Kwaku Gattah		Cassava	1	7	560		
14	Yeboah Sampson	0246544504	Maize	2	47	2350	6	300
			Cassava	3	8	640	4	320
15	Effah Marfo Ayom		Maize	2	3	210	1	70
			Cassava	2	5	400	1	80
17	Rose Tetteh	0248278648	Maize	1	25	1250	15	750
17	Kwaku Larbi	0240388913	Maize	2	35	1750	4	200
18	Theresa Appiah		Cassava	2	10	800	4	320
19	Stella Larbi		Maize	2	10	700	5	350
			Cassava	2	4	320	1	80
20	Juliana Larbi	0202827137	MAIZE	1	28	1400	85	85
21	Patrick Ansah	0246544504	MAIZE	2	47	2350	5.5	275

Table 5: Community Adinkrom

Communities			Acrea of Crops Farmed					
No	Name			Maize	**BAGS HARVESTED**	**MARKET VALUE**	**AMOUNT THAT GET LOST (KG)**	**LOSE IN MONETARY VALUE(GHc)**
1	Felicia Adonu		Maize	2	15	750	2	100
			Cassava	2	15	1200	6	480
2	Daniel Akwei	556839240	Maize	3	20	1400	3	210
			Cassava	2	10	800	15	1200
3	Alex Adonu	0541791648	Maize	2	10	700	7	490
			Cassava	2	10	800	0.5	40
4	Yaw Annan	0593520513	Maize	2	12	840	2	140
			Cassava	2	9	720	2	160
5	Kwadwo Ackoh		Maize	2	15	750	4	200
			Cassava	2	12	960	6	480
6	Comfort Addo	02488058052	Maize	1	5	250	0.5	25
			Cassava	1	7	560	6	480
7	Kwasi Arthur		Maize	1.5	8	560	3	210
			Cassava	0.5	4	320	2	160
8	Yaa Ajabeng		Maize	4	35	2450	4	280
			Cassava	4	18	1440	2	160
9	Ama Oforiwaa	054593007	Maize	2	22	1540	4	280
			Cassava	2	12	960	3	240
10	Enernest Asiedu	241105610	Maize	3	15	1050	5	350
			Cassava	2	10	800	2	160
11	KOFI DAFATI	-	Maize	1	18	900	8	100
12	Eric Okyere	0243831708	Maize	1.5	7	490	2	140
			Cassava	2	13	1040	1	80
13	DANIEL AMO		Maize	2.5	17	1190	5	350

14	John Mensah	5411354641	Maize	2	3	210	1	70
			Cassava	2	5	400	1	80
15	Adzege Godswins	246312017	Maize	1	25	1250	15	750
			Cassava	0.5	3	150	0.5	25
16	Patrick Miheso	246850749	Maize	3	35	1750	5	200
17	Kwasi Aboagye		Maize	2	25	1750	4	280
18	Dora Edin	558542253	Maize	3	28	1960	6	420
			Cassava	0.5	4	320	1	80
19	Rebecca Amankwa	591632283	MAIZE	1	28	1400	5	85
20	Francis Odoi		Maize	2	47	2350	7	350
21	John Mensah	559384037	Maize	1.5	15	1200	2	160

A cross section of the community at Akotekrom

A cross section of communities at Adinkrom

A cross section ofAbadjan community


A cross section of community participation at Abadjan

Figure: Corss section of Adiembra

Local enterprise (Maize milling machine)

Sample of drying maize method

Cross section of the community members at Adinkrom

Germiniating maize during indiginous drying and storage methods

Spoilt maize grains from local storage facilities