Tanzania Forest Conservation Group
Shirika la Kuhifadhi Misitu ya Asili Tanzania

THE ADDING VALUE TO THE ARC PROJECT

Assessment of changes in the wealth of project beneficiaries over the project lifespan

By

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Disclaimer

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List of Acronyms

AVA	Adding Value to the Arc
CA	Conservation Agriculture
CBFM	Community Based Forest Management
CBT	Community Based Trainer
EU	European Union
HH	Household
IGA	Income Generating Activity
JFM	Joint Forest Management
MJUMITA	Mtandao wa Jamii wa Usimamizi Misitu Tanzania
MVDC	Mvomero District Council
NA	Not applicable
TFCG	Tanzania Forest Conservation Group
TFS	Tanzania Forest Service
VSLA	Village Saving Loan Association
URT	United Republic of Tanzania

1.0 Introduction

1.1 Adding Value to the Arc: Forests and livelihoods in the South Nguru Mountains

The Tanzania Forest Conservation Group (TFCG) in partnership with the Community Forestry Network of Tanzania commonly known by its Swahili acronym, MJUMITA *(Mtandao wa Jamii wa Usimamizi Misitu Tanzania)*, Mvomero District Council (MVDC) and the Tanzania Forest Service Agency (TFS) were awarded a grant from the European Union (EU) to implement the project *"Adding Value to the Arc: Forests and Livelihoods in the South Nguru Mountains" (AVA)*. The primary objective of the project is to alleviate poverty and improve economic resilience among marginalized rural, natural resource-dependent communities living in the Mvomero District of Tanzania. The project aims to achieve its goal by supporting more sustainable forest management through Community Based Forest Management (CBFM) and Joint Forest Management (JFM) regimes. Through these arrangements the project aims to alleviate poverty and improve economic resilience among marginalised rural communities in the Mvomero District of Tanzania. The implementation period of the project was from 01/01/2013 -31/03/2018. In order to achieve the target, the project introduced and established various enterprise activities such as Village Saving Loan Associations (VSLA), improved *Allanblackia* nut business, Conservation Agriculture techniques including agroforestry, beekeeping practices and poultry farming especially chicken rearing.

This report documents change in the wealth status of the communities between 2013 and 2017.

1.2 Objective

The main objective of this assessment was to document the changes in wealth categories of people who participated in the livelihoods improvement activities that were introduced by the AVA project.

The assessment will provide data for the following indicator from the project's logical framework:
Impact Indicator 2: Number of households with a higher wealth ranking as a result of the project,

with its corresponding target:
3,000 households in Turiani Dvision, Mvomero District with higher wealth ranking by the end of Year 5.

1.3 Methodology

1.3.1 Study area

The assessment was carried out between December 2017 and January 2018 in the South Nguru Mountain landscape part of Eastern Arc Mountain Ecosystem. The area is located between 5˚ 50' S to 6˚ 10'S and 37˚ 25'E 37˚ 47'E in the Mvomero District of Morogoro Region in Tanzania. The district is made up of 12 wards which include Hembeti, Maskati, Mtibwa, Diongoya,Sungaji, Pemba, Kinda, Kanga, Mhonda, Kweuma, Kibati and Mvomero. There are two main forest reserves within the landscape which are Kanga Forest Reserve and Mkingu Nature Reserve. There are also patches of forest and woodland on village lands.

The assessment was carried out in 10 wards: Hembeti, Maskati, Diongoya, Sungaji, Pemba, Kinda, Kanga, Mhonda, Kweuma and Mvomero focusing on 39 villages (see Annex 1) involved in the AVA project. The total population of the study villages is about 101,581 people with a population growth rate of 2.6% (URT, 2013). In terms of ethnic composition, the area is inhabited mainly by Nguu and Kaguru who consider themselves as the original inhabitants of the area. Other tribes are Zigua, Maasai, Luguru, Chagga, Pare, Barabaig, Bena, Sukuma, Kinga, Hehe, Ngoni, and Nyakyusa who are immigrants to the area.

1.3.2 Sampling procedures and data collection methods

Defining the population
The population being assessed, comprises all women and men who participated in the project's livelihood activities.

The number of people who have participated in the different activities is summarised below:

Table 1. Number of people participating in 5 IGAs supported by the project.

Activity	Women	Men	Total	Number of villages
VSLAs	2,399	1,583	3,982	30
Beekeeping	48	79	127	4
Allanblackia	187	284	411	15
Conservation Agriculture	673	719	1392	31
Sustainable charcoal			90 (households)	3

Livelihood activities have been implemented in 40 villages. Most villages benefited from training in 2 – 3 IGAs. The number of villages receiving the different levels of support is summarised below. Further details of the IGAs supported in each village is provided in Annex 3.

Table 2. Number of villages benefiting from project support for 0 – 4 IGAs.

Number of IGAs supported per village	Number of villages benefiting from 0 – 4 IGAs
0	-
1	8
2	18
3	11
4	3
Total	**40**

As it is possible that an individual participated in more than one IGA training, for the purposes of estimating the total number of people involved in the IGAs, we adopted a conservative approach to estimating the sampling population. We have taken the total number of people involved in the VSLAs in the 30 villages where VSLAs were present, and only added beneficiaries of other IGAs from the 10 villages where VSLAs were not supported.

This includes 3,982 active members of VSLAs in 30 villages, plus 314 people trained in agriculture in 9 villages with no VSLAs. Only 1 village, Mndela, did not benefit from either VSLAs or agriculture. For Mndela we have added the 21 people benefiting from Allanblackia nut harvesting. This gives a conservative total of 4,317 people in 40 villages who have received IGA training from the project.

Stratified sampling was used to stratify the population according to various enterprise groups in the selected villages. Thus, four groups were identified:

1. Members of Village Saving and Loans Associations supported by the project (VSLAs),
2. Farmers receiving training in Conservation Agriculture (CA),
3. Beekeepers and
4. Allanblackia nut collectors.

The sample size per group was set at either 5% of participants / village for the conservation agriculture and VSLAs or 20% of participants / village for the Allanblackia and beekeeping. The higher the population per IGA the lower the sample rate and the lower the population per IGA the higher the sample rate. Thus, a total of 364 people were selected for the survey (Annex 1).

A simple random sampling technique was used to select individual members to be included in the assessment: each member of the group was assigned a number in an excel sheet, then the team made a piece of paper with numbers and put them in the container and then numbers were selected at random.

Data collection

A team of three people collected the information from the villages by interviewing the selected representatives. The team informed the Community Based Trainer (CBT) and other group leaders of the name of participants selected to participate in the assessment. Then appointments were made to meet with each household. The team used the wealth ranking assessment form (with closed and open questionnaire). See Annex 2.

1.3.3 Data analysis technique

Data collected were organised and analysed to generate descriptive statistics using Microsoft excel version 2016. Data was analysed based on wealth ranking indicators and these indicators were also categorized into three wealth status Top rank, Middle rank and Bottom rank. The wealth indicators included in the assessment were: housing materials, land ownership, livestock and other assets such as milling machine, motorcycle, kiosk etc (see Table 2 below). These indicators were measured before and after the respondent participated in the project activities.

Table 3: Wealth ranking indicators

<table>
<tr><th>Indicators</th><th colspan="3">Wealth status</th></tr>
<tr><th></th><th>Top rank (3)</th><th>Middle rank (2)</th><th>Bottom rank (1)</th></tr>
<tr><td>A) Housing materials</td><td>Modern materials</td><td>Mixed materials</td><td>Traditional materials</td></tr>
<tr><td>B) Land ownership</td><td>More than 10 acres</td><td>More than 5 acres and less than or equal to 10.</td><td>5 acres or less</td></tr>
<tr><td colspan="4">C) Livestock ownership</td></tr>
<tr><td>Cattle</td><td>More than 3</td><td>1 - 3</td><td>0</td></tr>
<tr><td>Goat/sheep or pig</td><td>More than 5</td><td>3 – 5</td><td>0 -2</td></tr>
<tr><td>Poultry</td><td>More than 20</td><td>11 -20</td><td>0-10</td></tr>
<tr><td colspan="4">D) Other assests</td></tr>
<tr><td>Teak or grevillea plantation of more than 0.5 acres</td><td>Respondent possess this asset.</td><td>Does not possess.</td><td>Does not possess.</td></tr>
<tr><td>Milling machine</td><td rowspan="8">Respondent possesses 3 or more of these assets.

Respondent was allocated to Top rank.</td><td rowspan="8">Respondent possesses 1 – 2 of these assets.

Respondent was allocated to Mid rank.</td><td rowspan="8">Respondent possesses none of these assets.

Respondent’s ranking was not changed.</td></tr>
<tr><td>Kiosk</td></tr>
<tr><td>Motorcycle</td></tr>
<tr><td>More than 50 coconut trees</td></tr>
<tr><td>Coffee field of more than 3 acres</td></tr>
<tr><td>More than 20 fruit trees</td></tr>
<tr><td>Vegetable fields of more than 0.25 acres</td></tr>
</table>

A) Housing materials:

- Modern materials: iron sheet, cement, cement blocks
- Traditional materials: thatch and mud
- Mixed: A combination of modern and traditional.

B) Land ownership:

- Number of acres owned

C) Livestock ownership:

- **Cattle:** A cattle can cost between 400,000 – 600,000 TZS to acquire depending on the size and the health of the animal. Cattle are also a difficult asset to grow because they are costly to buy and breeding takes longer.
- **Goat/sheep or pig:** Goats/sheep cost less than cattle between 40,000 – 60,000 TZS to acquire. Therefore the criteria for cattle and goats/sheep will not be the same.
- **Poultry:** A chicken costs approximately 5,000TZS depending on the size and health. They are easier to acquire and breed quickly with several chicks hatching in one cycle. Therefore, individuals in the bottom rank can also own and breed them.

D) Other assets

- **Milling machine:** This is considered an asset because it increases value of the raw produce by processing it. Hence, it is a value-adding asset and therefore those who own it are placed in the top rank. In addition, the individual had access to surplus income to purchase the machine.
- **Kiosk:** Individuals with kiosks are placed in the top rank because it is assumed they have surplus income to acquire/build/rent and maintain the kiosk (stocking the kiosk). It is also an income-generating asset.
- **Motorcycle:** A motorcycle can be an income-generating asset if it is used as a boda boda. In addition, the individual has the surplus income to purchase and maintain the vehicle (mechanical maintenance and fuel).
- **Teak plantation:** Teak trees are very valuable and can retail for more than 10,000,000TZS per tree.
- **50 coconut trees:** Coconuts are considered a higher end crop. They can retail for 800 TZS per piece in markets depending on size.
- **Coffee field of more than 3 acres:** Coffee is a cash crop and can be sold at a good price.
- **More than 20 fruit trees and Vegetable fields of more than 0.25 acres:** Produce from these would be more than subsistence amount and the surplus can be sold in markets as a business to generate income.

2.0 Results and Discussions

Characteristics of the sample population

The table below highlights the wealth status of the respondents before they participated in the project activities. These were computed based on the categorisation in Table 3. The majority (245) of the respondents were in the bottom rank; followed by the mid rank at 105 respondents and lastly, the top rank with 14 respondents.

Table 4. Number of respondents in each wealth category at the start of the project

Wealth Category	Number of respondents
Bottom rank	245
Mid rank	105
Top rank	14

2.1 Number of activities undertaken by respondents and year joined project income activities

The respondents were involved in different livelihood activities supported by the project such as Conservation Agriculture (CA), Village Saving and Loan Associations, Allanblackia nut collection and beekeeping.

Of the total (364) respondents, 285, 57, 18, and 4 were involved in one, two, three, and four activities respectively.

Respondents joined project activities in different years as indicated in Table 5. It was noted that few respondents joined the project activities during the year 2013, 2014 and 2017 these is because project started with few activities in 2013 and as the time goes more activities were included. However, in 2017 no new activities were introduced.

Table 5: The year respondents joined project's income activities

Year respondent joined the project's income generating capacity building activities	Number of respondents
2013	71
2014	43
2015	98
2016	111
2017	41
Total	**364**

Source: Field survey, December 2017 and January 2018

2.2 House condition/ status of the respondents

The materials used to build a house are one of the wealth indicators which was used to assess the wealth of the respondents before and after joining the project. The materials used to build the houses were categorized into three categories: modern, traditional and mixed. Modern materials are defined as cement/cement blocks and iron sheets. Traditional materials are mud and thatch. Mixed materials refers to any combination of modern and traditional materials.

Table 6 below illustrates the housing material respondents used in their houses before and after the project activities. There has been a significant increase (almost three-fold) in the number of respondents that used modern materials in their house structures after participating in project activities[1]. At the same time, the number of houses that used traditional materials also decreased by almost 2.5 times.

Table 6: Distribution of house materials used by respondents before and after joining the project

Housing material category	Before	After
Modern	49	137
Mixed	125	143
Traditional	177	73

This implies that there had been an improvement living conditions of the project participants. It was for example explained by Mama Masawe from Kanga Village who is experienced with AVA project activities that " *Wananchi wengi waliojiunga na mradi wa AVA hasa kwenye vikundi vya HISA na kilimo hifadhi wameweza kubadilisha muonekano wa nyumba zao, Kwa mfano miminilikwa na*

[1] Data that was entered as zero was considered unusable.

*nyumba ya fito na matope na kuezekwa kwa nyasi lakini sasa ninanyumba ya tofaliza kuchoma na kuwezekwa kwa mabati"*meaning that most of the villagers who joined the project especially the enterprise activities especially VSLA and conservation agriculture have managed to change the appearance of their houses" "for example, personally, I previously owned a pole and mud thatched house before then but I now own a burnt house roofed with iron sheet."

2.3 Land ownership

Table 7 below illustrates the trend in land ownership before and after participating in project activities. After participating in the project, respondents moved from the lowest category to the mid and top categories. The number of individuals owning more than 5 and less than 10 acres almost doubled. While the number of individuals owning 10 acres of more increased 2.4 times.

Table 7: Land ownership before and after project activities

Land ownership categories	Before activity	After activity
	Number	Number
0 - 5 Acres	308	249
More than 5 and less than 10 acres	41	79
Over 10 acres	15	36

2.4 Livestock ownership

In terms of livestock ownership, the area is dominated by cattle, goat and poultry which contribute to the income of the households. Cattle and goat ownership is, however, limited to selected households. Poultry ownership constitutes the bulk of livestock holdings. Herds belonging to poorer households are characterized by a small number of animals, while wealthier households tend to own more livestock.

2.4.1 Cattle

Cattle are the most expensive livestock to acquire and breed. It is estimated that a fully matured cow depending on its sex, health and size can be sold between 400,000 – 600,000 TZS. The table below shows changes in cattle ownership before and after project participation. It is noteworthy that the number of respondents owning 1 to 3 cattle increased almost 4 times. In addition, the number of people owning 3 or more cows more than doubled. The number of people owning 0 cattle also reduced by 20. Hence, they gained access to capital to buy at least 1 cow.

Table 8: Cattle ownership before and after project activity

Number of cattle owned	Before activity	After activity
0	351	332
1 to 3	3	11
More than 3	9	20

2.4.2 Goat/Sheep/Pig

Goats, sheep and pig are priced similarly costing less than cattle between 40,000 – 60,000 TZS to acquire. Table 9 below illustrates that the number of people that owned goats increased across all categories. The number of people in the category with more than 5 animals increased threefold for goat/sheep and 9 times for pig. Mostly notably is the sizable reduction in the number of people in the bottom category that moved to the higher categories indicating an increase in wealth.

Table 9: Goat/sheep/pig ownership after project activity

	GOAT/SHEEP		PIG	
Number of livestock	**Before activity**	**After activity**	**Before activity**	**After activity**
0 to 2	345	319	351	331
3 to 5	11	20	11	15
More than 5	8	25	2	18

It was revealed that, respondents who are involved with Allanblackia trade and VSLA are investing more in livestock especially goat and poultry.

2.4.3 Poultry

Poultry is the cheapest and most accessible livestock from all. A chicken is estimated to cost about 5,000TZS depending on its size and health. Once acquired, chickens are easier to breed as there are several chicks that hatch in a given breeding cycle. Hence, households can have a higher number of chickens as compared to other livestock. The number of households with over 10 chickens has increased. In the 11 to 20 category the number has increased by 1.5 times. The number of households with more than 20 chickens has increased sevenfold. Concomitantly, the number of households with 0 to 10 chickens has reduced because they have moved into the higher categories. This is an indication that the wealth of households has increased during project participation.

Table 10. Poultry ownership before and after the activity

Number of poultry owned	**Before activity**	**After activity**
0 to 10	303	204
11 to 20	49	71
More than 20	12	89

2.6 Other assets criteria

The survey also assessed other assets such as: kiosk, motorcycle and farms of teak, fruits and vegetables. With the exception of teak farm, if the individuals owned 0-2 of these assets they were placed in the mid rank and if they owned more than 2 they were placed in the top rank. If they owned none, their ranking was not changed. Teak trees are worth an estimated 10,000,000 TZS each and are the most worthy asset. Hence, those households that owned 0.25 acres of teak trees were placed in the top rank. Table 11 below illustrated the number of respondents that owned these assets before and after the activity.

The greatest growth was in motorcycle ownership followed by teak plantation and coffee field ownership. This is significant because teak plantations are the wealthiest asset in this study. There was no or little increase in milling machine ownership, coconut tree and fruit tree ownership. This may be because the return on these assets is not considered as high as the other assets and hence, households chose to invest in other assets.

Table 11: Ownership of other assets

	Number of respondents owned asset before joining the project	**Number of respondents owned asset after joining the project**
Milling machine	1	1
Kiosk	8	12
Motorcycle	20	56

	Number of respondents owned asset before joining the project	Number of respondents owned asset after joining the project
Teak or grevillea plantation of more than 0.5 acres	12	37
More than 50 coconut trees	2	3
Coffee fields of more than 3 acres	34	52
More than 20 fruit trees	7	7
Vegetable fields of more than 0.25 acres	36	43

2.7 Wealth status before and after the project intervention

2.7.1 Overall wealth status

Table 12 below illustrates the wealth status of beneficiaries before and after participating in the project activity. There was a considerable reduction (1246 or 43%) in the number of people in the bottom rank. The number of people in the mid rank increased by 75%. Although, this is a smaller percentage growth then the top rank it accounts for more people (937). Lastly, 308 people moved into the top rank after the project implementation, which is equivalent to an increase of 185%. These findings indicate that the project activities led to improved wealth status of the beneficiaries and reduced poverty.

Table 12: Wealth status before and after project activity.

	Sample size: 364		Total beneficiaries: 4317	
	Before the project	**After the project**	**Before the project**	**After the project**
Bottom	245	140	2906	1660
Mid	105	184	1245	2182
Top	14	40	166	474

2.7.2 Wealth status by gender

Table 13 below disaggregates the wealth status data by gender. The number of both males and females reduced in the bottom rank. The number of females reduced by 40% as compared to males by 44%. However, there was a greater reduction for females (712) because the number of females in the bottom rank was greater as compared to males. With respect to the mid rank, the number of females was lower than males before the activity but greater than males after the project activity. This is significant because it illustrates that a significant number of females moved into the mid rank. Lastly, with respect to the top rank, the number of males and females increased comparatively by 2.7 and 3 times respectively. Overall gender inequality is the most significant in the bottom rank. However, this was also the rank with the largest change in the number of females.

Table 13: Wealth status by gender

	Sample size: 364				Total beneficiaries 4,317			
	BEFORE ACTIVITY		**AFTER ACTIVITY**		**BEFORE ACTIVITY**		**AFTER ACTIVITY**	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Bottom	101	144	56	84	1198	1708	664	996
Mid	53	52	84	100	629	617	996	1186
Top	8	6	22	18	95	71	261	213

2.7.3 Wealth status by number of IGAs beneficiaries were part of

Table 14 below highlights that the wealth status of individuals improved after they participated in project activities. For every category the number of people in the bottom rank reduced and the number of people in the mid rank and top increased after the project activity[2].

Table 14. Number of respondents in different wealth rankings categorised by number of IGAs they participated in.

	Sample size: 364						Total beneficiaries 4,317					
	BEFORE ACTIVITY			AFTER ACTIVITY			BEFORE ACTIVITY			AFTER ACTVITY		
	Bottom	Mid	Top	Bottom	Mid	Top	Bottom	Mid	Top	Bottom	Mid	Top
1 IGA	193	78	14	108	142	35	2289	925	166	1281	1684	415
2 IGAs	39	18	0	26	27	4	463	213	0	308	320	47
3 IGAs	12	6	0	6	12	0	142	71	0	71	142	0
4 IGAs	1	3	0	0	3	1	12	36	0	0	36	12

2.7.4 Movement between wealth ranks after the project activities.

Table 15 below highlights the movement of households between different wealth rankings. About two thirds of households (66%) remained in the same wealth ranking before and after the activity. Approximately 32% of households moved to a higher rank and the remaining 2% moved to a lower rank[3]. The project had set a target to move 3000 households to a higher wealth ranking at the end of 5 years of implementation. However, the table below illustrates that only 1399 households moved to a higher rank (approximately 46% of the target).

Table 15. Movement of households between ranks after the project activity

		Sample size: 364		Total beneficiaries: 4317	
	Movement	**Number of households**			
Moved to a higher rank	Bottom to Mid	89		1056	
	Bottom to Top	21		249	
	Mid to Top	8	118	95	1399
Moved to a lower rank	Mid to Bottom	3		36	
	Top to Mid	1		12	
	Top to Bottom[4]	2	6	24	71
Remained the same.	Remained at the Bottom	135		1601	
	Remained at Mid	94		1115	
	Remained at the Top	11	240	130	2846
		364		**4317**	

[2] With the exception of the 3 IGAs category where the number of people in the top rank did not increase after the project activity.

[3] The survey reported that 3 households had Teak or grevillea plantation of more than 0.5 acres before the activity but not after the activity. Two households moved out of the top rank and the other assets reported placed them in the bottom rank (whereas one family fell into mid because of other assets reported). It is unknown what happened to the plantation. If the family sold the plantation they would have a large sum of money unreported. However, since the information is unavailable it is assumed the families are now in the bottom rank. When this figure is extrapolated it amounts to 24. This number is high as this case would probably not occur often.

[4] 2 households had Teak or grevillea plantations of more than 0.5 acres before the activity but not after the activity. Hence, they moved out of the top rank. All other assets placed them in the bottom rank after the activity.

The table below disaggregates the movement between ranks by gender. More females moved to a higher rank as compared to males. The number of males and females that moved to a lower rank were equal. However, while more females experienced an improvement in ranking, the number of females that stayed at the same rank was also higher than males.

Table 16. Movement of households between ranks after the project (disaggregated by gender)

		Sample size: 364		**Total beneficiaries: 4317**	
		Male	Female	Male	Female
Moved to a higher rank	Bottom to Mid	35	54	415	640
	Bottom to Top	13	8	154	95
	Mid to Top	2	6	24	71
	Total	**50**	**68**	**593**	**806**
Moved to a lower rank	Mid to Bottom	2	1	24	12
	Top to Mid	0	1	0	12
	Top to Bottom	1	1	12	12
	Total	**3**	**3**	**36**	**36**
Remained the same.	Stayed at the Bottom	53	82	629	973
	Stayed at Mid	49	45	581	534
	Stayed at the Top	7	4	83	47
	Total	**109**	**131**	**1293**	**1554**

2.7.4 Movement between wealth ranks disaggregated by activity type

In assessing the effectiveness of the different interventions, it is interesting to look at the relative proportion of participants changing wealth rank when clustered by IGA. As Table 17 shows, beekeeping resulted in the highest proportion of participants (56%) moving up from one wealth rank to another, followed by VSLAs (33%). In contrast only 18% of those participating in Allanblackia nut collection moved up a wealth rank, whilst 79% stayed the same.

Table 17: Movement between wealth ranks of participants disaggregated by IGA

	Allanblackia	**CA**	**VSLA**	**Beekeeping**
Bottom to Mid	10%	18%	28%	41%
Bottom to Top	6%	6%	3%	13%
Mid to Top	2%	3%	2%	3%
% Moved up	**18%**	**26%**	**33%**	**56%**
Mid to Bottom	2%	1%	0%	0%
Top to Mid	0%	1%	0%	0%
Top to Bottom	1%	0%	0%	0%
% Moved down	**3%**	**2%**	**1%**	**0%**
Stayed at the Bottom	47%	41%	43%	19%
Stayed at Mid	29%	27%	23%	16%
Stayed at the Top	3%	4%	0%	9%
% stayed the same	**79%**	**72%**	**66%**	**44%**

3.0 Conclusion

The results of the survey indicate that at least 32% of participants in income generating activities supported by the project, moved to a higher wealth rank after participating in activities, this is equivalent to 1399 households.

Relative to the project's target that **3,000 households in Turiani Dvision, Mvomero District with higher wealth ranking by the end of Year 5,** the results indicate that the project achieved its target by 46%, with 1,399 households moving to a higher wealth rank.

Although, the overall target was not achieved, all the assets examined above (a. housing materials, b. land ownership, c. livestock ownership and d. other assets) showed an improvement. Hence, this illustrates that there has been an increase in wealth and consequently, quality of life, amongst a broader number of participants, even if participants did not meet all of the criteria for a higher wealth rank category.

It is also likely that the total number of participants in project activities was higher than the estimated 4,317. As outlined at the beginning of the report, the study conservatively limited the population to VSLA members plus participants in other IGAs only from villages where VSLAs were not present. This is because we did not have clear data on the overlapping participation between different IGA trainings. During the survey, when participants were asked about how many IGAs they had participated in, the majority (285 respondents equivalent to 78%) stated that they had only participated in 1 IGA. This would suggest that 78% of the participants in other IGAs in the villages with VSLAs, only benefited from 1 IGA. In the case of the agricultural training 794 farmers were trained in villages that also had VSLAs. If 78% of those farmers did not participate in the VSLAs, it would indicate that 619 (78% of 794) beneficiaries have not been considered in our estimate of the total beneficiaries i.e. the total number of beneficiaries was at least 4,935 people (4317 in the original estimate + 618 CA farmers). If 32% (198 people) of those participants also moved to a higher wealth ranking the extrapolated increase would be 1597 or 53% of the target of 3,000.

Overall it is clear that the project's income generating activities have benefited participants with 91% of those interviewed stating that the project has improved their livelihoods. Comparing the cost of implementation with the return, in terms of the proportion of participants moving up a wealth category, the project's support to VSLAs proved to be the most cost-effective.

4.0 Annexes

Annex 1. Sample size

Village	Number of HH involved in VSLA	Sample intensity (5%)	Number of HH involved in CA	Sample intensity (5%)	Number of HH involved in Beekeeping	Sample intensity (20%)	Number of HH involved in AB	Sample intensity (20%)
Bungoma	180	9	NA	NA	NA	NA	0	0
Bwage	120	6	40	2	26	4	0	0
Difinga	204	10	40	2	NA	NA	0	0
Digoma	84	4	40	2	1	0	NA	NA
Dihombo	152	8	NA	NA	NA	NA	NA	NA
Hembeti	140	7	40	2	NA	NA	NA	NA
Kanga	221	11	67	3	41	22	NA	NA
Kigugu	57	3	40	2	NA	NA	NA	NA
Kisimaguru	100	5	40	2	NA	NA	57	11
Komtonga	23	1	NA	NA	NA	NA	NA	NA
Kwadoli	141	7	40	2	NA	NA	NA	NA
Kwelikwiji	158	8	40	2	NA	NA	30	6
Luwamba	77	4	40	2	NA	NA	12	2
Mafuta	160	8	40	2	NA	NA	11	2
Makuyu	361	18	40	2	NA	NA	NA	NA
Masimba	152	8	90	5	NA	NA	NA	NA
Mbogo	27	1	40	2	NA	NA	NA	NA
Mhonda	172	9	40	2	NA	NA	12	2
Mkindo	175	9	NA	NA	NA	NA	NA	NA
Msolokelo	214	11	45	2	NA	NA	4	1
Msufini	44	2	NA	NA	NA	NA	NA	NA
Mziha	419	21	32	2	NA	NA	NA	NA
Ndole	NA	NA	40	2	NA	NA	NA	NA
Pemba	NA	NA	40	2	NA	NA	9	2
Semwali	NA	NA	40	2	NA	NA	19	4
Ubiri	NA	NA	40	2	NA	NA	139	28
Mvomero	294	10	NA	NA	NA	NA	NA	NA
Kibatula	59	3	40	2	NA	NA	NA	NA
Magunga	NA	NA	40	2	NA	NA	NA	NA
Dibago	NA	NA	40	2	NA	NA	NA	NA
Maskati	NA	NA	40	2	NA	NA	21	4
Mlaguzi	NA	NA	40	2	NA	NA	NA	NA
Makate	NA	NA	40	2	NA	NA	23	4
Kinda	NA	NA	40	2	NA	NA	11	3
Gonja	NA	NA	40	2	NA	NA	54	11
Diburuma	NA	NA	40	2	NA	NA	NA	NA
Mndela	NA	NA	NA	NA	NA	NA	14	3
Digalama	NA	NA	40	2	NA	NA	22	4
Dihinda	NA	NA	40	2	NA	NA	NA	NA
Total	**3734**	**183**	**1354**	**68**	**68**	**26**	**438**	**87**

Village	Number of HH involved in VSLA	Sample intensity (5%)	Number of HH involved in CA	Sample intensity (5%)	Number of HH involved in Beekeeping	Sample intensity (20%)	Number of HH involved in AB	Sample intensity (20%)
Grand total interviewed 364 (202 women and 162 men)								

Source: Field survey, December 2017 and January 2018

Annex 2. Adding Value to the Arc: Wealth Ranking Monitoring Form – 2017/18

Village: Group Name: Date: / /2017/2018

Name of person completing the form: Checked by: _____

Respondent Name: Respondent gender: □ Female □ Male

Please can you tell me which of the following AVA project activities you have participated in:

Note to enumerators: read out each one and tick yes or no or don't know for each category.

AVA Project Livelihood Activity that respondent participated in	**Yes**	**No**	**Don't know / Comment**
Farmer field schools or other trainings on climate smart agriculture			
Agroforestry training			
Village Savings and Loan Association			
Allanblackia nut collection			
Beekeeping			
Other (specify in comments)			

In your opinion, has the support provided by the AVA project improved your livelihood?

□□□ Yes □No □Don't know

In what year did you first participate in any one of the livelihood activities organised by the AVA project?

Note to enumerators: tick the year when first involved in at least 1 livelihood activity. Only tick 1 year.

□ 2013 □ 2014 □ 2015 □ 2016 □ 2017

In that year and before participating in any of the AVA livelihood activities that I mentioned previously, please can you describe what the roof, walls and floor of your house was made of.

Note to enumerators: start with the 'before' for roof, walls and floor then move to Question 5. Tick the relevant box.

Has it changed since then? □ Yes □No □Don't know. *If yes or don't know, go to 6. If no, go to Q7.*

Please can you describe what the roof, walls and floor of your house is now made of.

Category	Before participation in AVA (tick)	Current status (tick)	Comments
Roof – i. corrugated with iron sheet			
Roof – ii. thatching: leaves and / or grasses			
Roof – other. Describe.			
Walls – i. mainly/all blocks and or burnt bricks			
Walls – ii. mainly/all poles with mud and / or mud bricks			
Walls – iii. thatching: leaves and / or grasses			
Walls – Other. Describe.			
Floor – i. Cement			
Floor – ii. Mud			
Floor – Other Describe			

Note to enumerators. Tick here if status has improved in any category from ii or iii up to i. □

How much land did you **own** in the year when you first participated in an AVA activity?

How much land did you **rent** in the year when you first participated in an AVA activity?

How much land do you **own now**?

How much land do you currently **rent now**?

Note to enumerators: record responses to questions 7 – 10 in the table below. Tick the relevant category in each column.

Category	Land Owned		Land Rented	
	Before participation in AVA	Current status	Before participation in AVA	Current status
0 acres				
Less than 1 acre				
1 – 14 acres				
More than 14 acres				

Note to enumerators. Tick here if land owned or rented hasincreased from 0 or < 1 acreto more than 1 acre □

1. Please can you tell me how many of the following livestock you **owned**in the year when you first participated in an AVA activity?

2. Has it changed since then?
□ Yes □ No □Don't know. *If yes or don't know, go to 13. If no, go to Q14.*

3. How many of the following livestock do you now own?
Note to enumerators: record responses to questions 11 and 13 in the table below. Tick the relevant category in each column.

Type of livestock	Before participation in AVA (Number of animals)	Current status (Number of animals)
Cattle		
Goat		
Poultry		
Pig		
Other. Specify.		

Note to enumerators. Tick here if number of livestock has increased from 0 or (< 10 poultry)□

4. Please can you tell me whether you were employed at all in the year when you first participated in an AVA activity?
□Yes □ No □Don't know. *If If yes or don't know, go to 15. If no, go to Q17.*

5. Were you employed on a full-time basis with a regular salary?
6. Were you employed on a part-time basis as a labourer?
7. Are you now employed on a full-time basis with a regular salary?
8. Are you now employed on a part-time basis as a labourer?

Note to enumerators: record responses to questions 14 - 18 in the table below. Tick the relevant category in each column.

Type of employment	Before participation in AVA. Tick 1	Current status. Tick 1
Employed on a full-time basis with a regular salary		
Employed on a part-time basis as a labourer		
Not employed on a full- or part-time basis		

Note to enumerators. Tick here if respondent has gained employment□

9. Please can you tell whether you **ownedany of the following items** in the year when you first participated in an AVA activity?

10. Has it changed since then? □ Yes □ No □Don't know. *If yes or don't know, go to 21. If no, go to 22.*

11. Do you own any of the following items now?
Note to enumerators: record responses to questions 19 and 21 in the table below. Tick the relevant category in each column.

Item	Owned before participation in AVA (tick 1)		Current status(tick 1)	
	Yes	No	Yes	No
Milling machine				
Kiosk				
Motor cycle				
Mobile phone				
Teak or grevillea plantation of more than 0.5 acres				
More than 50 coconut trees				
Coffee fields of more than 3 acres				

More than 20 fruit trees				
Vegetable fields of more than 0.25 acres				

Note to enumerators. Tick here if respondent has gained any of the items listed above□

12. Has the support provided by the AVA project enabled you to earn an income from a business that you were not involved in before the project?

□ Yes □ No □Don't know. *If yes or don't know, go to 23. If no, go to end of questionnaire.*

If yes, which:

□ Beekeeping □Allanblackia nut trade □ Vegetable cultivation □ Fruit cultivation

□Trading □ Food preparation □ Livestock

Thank you for participating.

Enumerators, tick here if you have ticked any of the boxes indicating a positive livelihood change. □

Annex 3. Distribution of IGA training in AVA Project villages.

	Village	Agriculture	VSLA	Poultry	Allanblackia	Number of IGAs
1	Bungoma		1			1
2	Bwage	1	1	1		3
3	Dibago	1		1		2
4	Diburuma	1		1		2
5	Difinga,	1	1			2
6	Digalama,	1				1
7	Digoma,	1	1			2
8	Dihinda,	1		1		2
9	Dihombo		1			1
10	Gonja,	1		1	1	3
11	Hembeti	1	1			2
12	Kanga	1	1	1		3
13	Kibatula	1	1	1		3
14	Kigugu	1	1			2
15	Kinda	1	1	1	1	4
16	Kisimaguru	1	1		1	3
17	Komtonga		1			1
18	Kwadoli	1	1			2
19	Kwelikwiji	1	1	1	1	4
20	Luamba	1	1			2
21	Mafuta,	1	1	1	1	4
22	Magunga	1	1	1		3
23	Makate	1	1		1	3
24	Makuyu	1	1	1		3
25	Masimba	1	1			2
26	Maskati	1			1	2
27	Matare		1		1	2
28	Mbogo,	1	1			2
29	Mhonda,	1	1			2
30	Mkindo		1			1
31	Mlaguzi	1				1
32	Mndela				1	1
33	Msolokelo	1	1		1	3
34	Msufini		1			1
35	Mvomero		1		1	2
36	Mziha,	1	1			2
37	Ndole,	1	1			2
38	Pemba,	1			1	2
39	Semwali	1	1		1	3
40	Ubiri,	1	1		1	3
		32	**31**	**12**	**14**	