



2024

GREEN BUSINESS

MIDLINE STUDY REPORT

**Creating Opportunity for Young People and Women
in Rural Kenya**

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and Women in Rural Kenya

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1 INTRODUCTION

The goal of the '*Green Businesses: Creating Opportunity For Young People And Women In Rural Kenya*' project is to ensure green skills of women and youth are promoted and that poverty and hunger are reduced in rural areas of Kakamega, Makueni, and Kajiado in Kenya.

Toward this goal, the project combines complementary strategic approaches which include:

Support the strengthening of curricula for selected private training facilities for Green Skills especially in courses such as post-harvest loss reduction, nutrition and food security, and value addition. The training also includes financial literacy, social life skills, and group dynamics.

Enhanced training that covers financial literacy and business management for the employees of the identified training facilities to be able to pass on the corresponding competencies to young people and women during their education.

Mapping all successful local agripreneurs/ practitioners as mentors to support the training and establishment of youth- and women-led green businesses.

Connect with experienced local agripreneurs/ practitioners to engage them to train apprentices in their green businesses.

The project's strategy is expected to culminate in improved livelihoods for women and young people in three counties in Kenya with four intermediate outputs:

Output 1:

The role of TVET Institutions in green skills development is enhanced.

Output 2:

Youth and women receive a green education and find green (self-) employment after completion.

Output 3:

The vocational training offer in green competences is known and appreciated by a broad public.

Output 4:

The capabilities and capacities of the partner organizations (Zizi Afrique and ADS) are enhanced and professionalized.

1500 *Outcome: 1,500 women and young people in Kakamega, Makueni and Kajiado County acquire technical, economic, and life skills.*

This project is being implemented by Latia Agribusiness Solutions, Bukura Agricultural College, and Makueni Agriculture College.



2 STUDY OVERVIEW & METHODOLOGY

2.1 Midline Evaluation General Objective

The general objective of the midline evaluation was to assess the extent to which green businesses project targets have been achieved and to provide recommendations for the remaining project period.

2.2 Study Design

This study adopted a mixed research method in which researchers incorporated methods of collecting and analysing data from the quantitative and qualitative research approaches in a single research study¹. Cross-sectional survey research design was used to accommodate the quantitative approach while phenomenological research design addressed the qualitative aspects of the study.

2.3 Target Population

The target population in this study consisted of all 1,500 women and young people including ongoing TVET students, graduate trainees, and administrators from Latia Agribusiness Solutions (Kajiado), Bukura Agricultural College (Kakamega), and Makueni Agriculture College (Makueni). Others included mentors and employers, as well as partner representatives from ADS and Zizi Afrique.

2.3.1 Sample Size

This study used a sample size determination formula for finite population (Nassiuma, 2000) to arrive at the sample size of TVET Trainees including youth and women in Bukura, Kajiado and Makueni. This study picked a population proportion of 30% (0.3) of the target population of 1500 to determine the sample size (n) of TVET trainees. Table 1 shows the summary of sample size of those who participated in the study.

Table 1: Summary Of Sample Size Of The Respondents

Respondent	Sample Size
Ongoing Trainees	95
Graduate Trainees	30
Women Groups (3 groups)	66
Institutional Leads / Administrators	3
ADS Representative	1
Zizi Afrique Representative	1
Mentors	3
Employers	3
Total	197

¹ Creswell, J. W. (2003). Research design: Qualitative, quantitative and mixed methods approaches (2nd ed.). Thousand Oaks, CA: SAGE Publications.

2.3.2 Sampling Procedure

Simple random sampling procedure was used to arrive at a representative number of ongoing trainees and graduate trainees in the TVET institutions. On the other hand, purposive sampling procedure was used to arrive at the sample of women groups, institutional leads/administrators, ADS representative, Zizi Afrique representative, mentors and employers.

2.4 Data Collection Instruments

Various data collection methods were used to collect data including questionnaire, interview and Focus Group Discussion methods.

Questionnaire Method

Self-administered questionnaires were used to collect data from ongoing TVET trainees. Further, virtual online questionnaires were used to collect data from the graduate trainees since they were out of college.

Interview Method

Face to face interviews were used to collect data from the TVET administrators. Mobile technology was also used to collect data from the ADS representative, the Zizi Afrique representative, mentors and employers.

Focus Group Discussion (FGD)

Focus Group Discussion method was used to collect data from 3 women groups in Kajiado, Makueni and Kakamega.

2.5 Data Analysis Procedure

The analysis was done both quantitatively and qualitatively in order to establish the effectiveness of the green business project. Qualitative data collected from some of the trainees were also used to document human interest stories. Table 2 shows a summary of project output against respective indicators.

Table 2: Summary Of Project Output Against Indicators

No.	Output	Indicator
1.	Role of TVET Institutions in green skills development is enhanced	Curriculum Review Networking Assessment/ Examination Certification
2.	Youth and women receive a green education and find green (self-) employment after completion	Enrolment/ completion Employment Attachment Assessment Certification
3.	The vocational training offer in green competences is known and appreciated by a broad public	Public awareness Public appreciation
4.	The capabilities and capacities of the partner organizations (Zizi and ADS) are enhanced and professionalized	Training (Monitoring and Evaluation, Core Humanitarian Standards (CHS), Complaints Reporting Mechanism (CRM))



3 STUDY RESULTS

3.1 Introduction

This section covers the analysis and presentation of the findings of the Green Businesses Project, which involved three institutions, namely Bukura, Makueni and Latia in rural areas of Kakamega, Makueni, and Kajiado counties in Kenya. The first section presents the background information of the respondents (graduates and ongoing trainees). Other parts cover: green business education (benefits, satisfaction, curriculum and certification), mentorship program, trainees' employment, startups, networking, and capacity building of partners. The last section covers challenges associated with green business education.

3.2 Background information of youth and women trainees

3.2.1 Institution of Study

Graduate and ongoing trainees were asked to indicate the institution they studied green business education. Table 3 shows the distribution of the trainees by the name of institutions.

Table 3: *Institution of Study*

Institution	No.	%
Graduates		
Bukura	10	33.3
Makueni-Latia	20	66.7
Ongoing Trainees		
Bukura	31	32.7
Makueni	50	52.6
Latia	14	14.7

3.2.2 Gender of the Trainees

The study examined gender distribution of the graduate, ongoing trainees and women trainees who took part in the study. Majority (53.3%) of the graduate trainees who took part in the study were males, the remaining 46.7% of them were female. With regards to the gender of ongoing trainees, 41.1% of them were males while 58.9% of the trainees were female.

3.2.3 Age

The age bracket of graduate and ongoing trainees who participated in the green education project was sought in order to establish their distribution. Table 4 shows the age distribution of the trainees.

Table 4: Distribution Of Graduate And Ongoing Trainees By Age

Age	Graduate	Ongoing
18-24 years	46.7	50.5
25-29 years	13.3	27.4
30-35 years	3.3	22.1

3.2.4 How Trainees Learnt about Green Business Education

The study examined how trainees learnt about green business education. Table 5 shows the distribution of the trainees on how they learnt about the green business education project.

Table 5: How Trainees Learnt About Green Business Education (% Of Total Trainees)

Learning about Green Business Education	Graduate	Ongoing Trainees
Social media	3.3	13.7
Friend	23.3	12.6
Through ADS/Zizi	73.3	68.4
Mentor	-	2.1
Through some Beneficiaries	-	3.2

3.2.5 Training Undertaken by the Trainees

The study was interested in establishing the training fields the trainees undertook. Table 6 shows the training fields undertaken by the trainees who took part in the study.

Table 6: Training Undertaken By The Trainees (% Of Total Trainees)

Green Business Training Undertaken	Graduates	Ongoing Trainees
African leafy Vegetables	-	2.1
Tissue Culture Banana Production	33.3	-
Dairy Farming	3.3	14.7
Horticulture	63.3	35.8
Poultry production	-	47.4

3.2.6 Background Information of Women Trainees

Table 7 shows the distribution of women group members' demographics. These women's groups reveal diversity in demographic characteristics, including age, education level and occupation. Such diversity stresses the varied backgrounds and experiences within these communities, reflecting the complexities of women's roles and contributions across different societal contexts.

Table 7: Demographic Characteristics Of Women Group Members

		Institution		
		Bukura Women Group	Makueni Women Group	Latia Women Group
Gender	Male	1	3	1
	Female	38	13	10
Age Bracket	18-25 years	3	1	3
	26-35 years	4	2	-
	36-50 years	12	7	6
	51-60 years	11	6	-
	61 years and above	9	-	2
Education Level	Informal	1	-	-
	Primary	10	8	3
	Secondary	23	8	8
	College	5	-	-
Occupation	Farmer	39	16	5
	Business: Livestock	-	-	2
	Business: Agribusiness	-	-	2
	Business: Jeweller	-	-	1
	Teacher	-	-	1

3.3 Relevance of green business education

In order to establish the relevance of the green business project, the study considered the benefits of Green Education to the trainees.

3.3.1 Graduate Trainees’ Response on Project Relevance

The graduate trainees were asked to give the benefits of green business education. Table 8 shows the distribution of the graduates’ responses.

Table 8: Benefits Of Green Business Training To Graduates

Statement	Strongly Disagree	Disagree	Un-decided	Agree	Strongly Agree
Provided me with a deep understanding of the agricultural sector	-	-	3.3	70.0	26.7
Provided me with entrepreneurial skills including financial management, marketing, and business planning	-	3.3	6.7	63.3	26.7
Exposed me to the latest advancements in agricultural technology and precision farming	-	-	10.0	73.3	16.7
Exposed me to environmentally and sustainable farming methods	-	-	-	83.7	16.7
Opened various career opportunities such as farm management, agricultural finance, marketing, green business consulting	-	-	16.7	63.3	20.0
Equipped me with problem solving skills to address and overcome challenges in real-world agricultural scenarios	-	-	-	76.7	23.3
Provided me with networking opportunities with industry professionals, researchers and fellow students	-	-	10.0	66.7	23.3

3.3.2 Women Groups Trainees Response on the Relevance of Green Business Project

During the focus group discussions, three women's groups were interviewed, representing diverse perspectives and experiences in the realms of green businesses education. These groups, hailing from Bukura, Makueni, and Latia, offered valuable insights into green businesses education.

During the focus groups discussion with the women's group in Bukura, the participants were asked about how the green business project benefited them.. A participant noted that:

*.... green business equipped me with **entrepreneurial skills**, including financial management, marketing, and business planning, crucial for running successful agricultural ventures. For example, we were taught on saving with VLC women association. So whenever I sell my produce, I save with them and they are also able to loan me in times of need for expansion of my business (Bukura Women FGD Participant 2, 2024).*

Another member of the group emphasized the **exposure to cutting-edge agricultural technology and precision farming techniques**. She observed that:

I gained insights into the latest advancements in agricultural technology and precision farming, which have been invaluable for enhancing productivity and sustainability. For example we have been taught on constructing modernized structured cowsheds for our animals, a milking structure and a different structure for cutting horns and spraying our animals (Bukura Women FGD Participant 3, 2024).

Another participant echoed the sentiment of sustainability, noting the shift towards environmentally friendly farming practices. She had the following to say:

*The training exposed me to **environmentally friendly and sustainable farming methods**, promoting responsible agricultural practices in a way that we are able to produce African leafy vegetables and cows feed from the manure we produce from our cows. We therefore do not go for artificial fertilizers (Bukura Women FGD Participant 4, 2024).*

One of the participants also shared a personal transformation story, illustrating how the training had opened doors to various **career opportunities within the agricultural sector**. She noted that:

This green business training opened up various career opportunities such as farm management, agricultural finance, marketing, and green businesses consulting, empowering me to pursue diverse paths within the agricultural sector. You know, before, I had no stable job to sustain my family and educate my children. But through the initiative of ADS and Bukura College, at least from the selling of my milk and bananas, I'm better off. I'm able to buy a few things in the house and even school fees for my children. (Bukura Women FGD Participant 5, 2024).

Another participant emphasized the development of **problem-solving skills** essential for addressing real-world challenges in agriculture. She observed that,

"Through problem-solving skills acquired during the training, I can effectively address challenges in real-world agricultural scenarios" (Bukura Women FGD Participant 6, 2024).

Another benefit of green business education is the invaluable networking opportunities fostered by the training. The member of the group noted that:

***Networking opportunities with industry professionals, researchers, and fellow students** expanded my connections and provided insights into emerging trends and best practices in agriculture. (Bukura Women FGD Participant 7, 2024).*

During the FGD with Makueni women group, the participants were asked about how the project benefited them. One participant in the group noted that she has recognized the **potential for diversification and greater income generation** through poultry farming. Integrating crops such as maize, green grams, and cowpeas into chicken feed not only ensures the well-being of the livestock but also diversified revenue streams. Excitedly, respondent 2 observed:

I have learnt that as I continue with poultry farming and chicken rearing... we were taught that crops such as maize, green grams, and cowpeas, which we used to consider selling... We can mix these crops into the chicken feed to ensure that our chickens are well-fed, resulting in the production of eggs that will generate income. Furthermore, chickens themselves serve as a source of income since their meat can be sold... (Makueni Women FGD Participant 2, 2024).

In terms of economic empowerment, participants experienced tangible benefits from their involvement in this training program. One participant expressed gratitude for the financial support provided by poultry farming, which has contributed to overall **household income stability**. Respondent 7 made an observation:

Since I started poultry farming, I have seen significant progress due to the quick income generated by poultry... Raising poultry properly, as taught by my teacher, yields earnings within approximately three months from chick to maturity. This income surpasses what I was earning before. I'm grateful for the financial support provided by poultry farming since it helps me in raising school fees.... (Makueni Women FGD Participant 7, 2024).

Previously, the members of the group depended mainly on animal produce as a source of food but after the training, they have incorporated vegetables in their diet and this has improved the nutritional value of the food taken by each household.

In the past we did not know (about) including vegetables in our diet, we mainly depended on milk, taking a small amount of milk and mixing with ugali. Right now we cook vegetables with Ugali and this helps to improve the health of our children and also our own health (Latia Women FGD Participant 3, 2024).

3.3.3 Green Businesses Project Relevance Matrix

The Green Business Project has brought about some specific changes among the project youth and women in Kakamega, Makueni and Kajiado (See Table 9). The respondents, including graduate trainees and women trainees attest to the relevance of the project through the significant changes already observed that contribute towards the improvement of green business skills and employability.

Table 9: Green Businesses Project Relevance Matrix

Respondent	Key Project Benefits/ Relevance
Graduate Trainees	<ul style="list-style-type: none"> • Provided the trainees with deep understanding of agricultural sector; • Developed the trainees’ entrepreneurial skills including financial management, marketing, and business planning; • Created various career opportunities within the agricultural sector; • Developed the trainees’ problem-solving skills for real-world agricultural challenges; • Provided networking opportunities with industry professionals, consultants, and practitioners; • Offered economic empowerment through quick income generation from projects like dairy farming, vegetable farming, poultry farming, tissue culture banana.
Women Trainees (3 women groups - 66 members)	<ul style="list-style-type: none"> • Gave the beneficiaries a deep understanding of the agricultural sector, especially in dairy farming, tissue culture banana, poultry production, and African leafy vegetables; • Equipped the beneficiaries with entrepreneurial skills, including financial management and saving; • Supported the beneficiaries to gain insights into the latest advancements in agricultural technology thus enhancing productivity and sustainability; • Equipped the beneficiaries with environmentally friendly and sustainable farming methods thus promoting responsible agricultural practices; • Opened up various career opportunities such as farm management, agricultural finance, marketing, and green businesses consulting; • Built learners with problem-solving skills • Exposed beneficiaries to networking opportunities with industry professionals, consultants and fellow students; • Contributed to social-economic growth the beneficiaries through financial stability, thus ensuring the overall household income stability

3.4 Effectiveness of green business education

The findings on project effectiveness were drawn from the analysis of the midline evaluation touching the following project outputs: The role of TVET Institutions in enhancing green skills development; Youth and women receive a green education and find green (self-) employment after completion; The vocational training offer in green competences is known and appreciated by a broad public and the capabilities and capacities of the partner organizations (Zizi and ADS) are enhanced and professionalized.

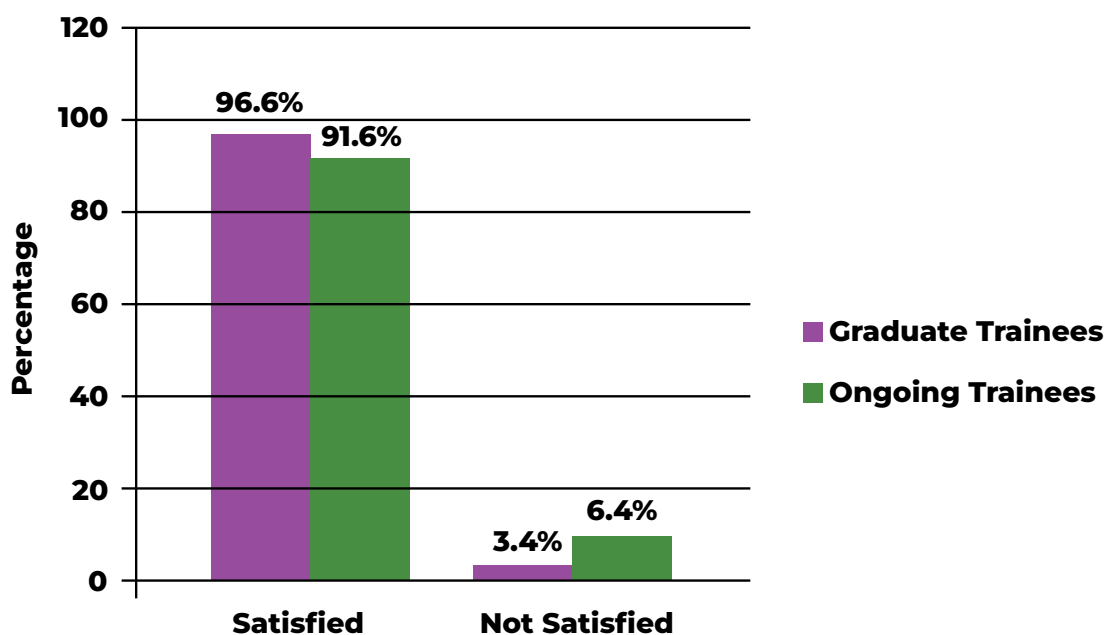
3.4.1 The Role of TVET Institutions in Green Skill Development Enhanced

Enhancement of the role of TVET institutions in green skills development is another key output of the green business project. The indicators under this output included TVET institutions curriculum review role and networking role.

3.4.1.1 Green Business Curriculum

The trainees were asked to indicate whether they were satisfied with how the green business education curriculum was organized and structured. Figure 1 below summarizes the trainees’ responses.

Figure 1: Trainees' satisfaction with how the curriculum is organized



During the interview with the college administrator 1 regarding whether the institution has the Green Business curriculum, she noted that the institution had its own covering poultry, banana tissue culture and African leafy vegetables (Admin 1, 2024). Asked to rate the curriculum, she pointed out that it was sound and provided the institution with training and practical insights into sustainable green business practices.

Administrators' Response on Curriculum Review

During the interview, the administrator was further asked whether the college had any Green Business curriculum review. She indicated that there was no review since the curriculum was still new. She noted,

“There was a curriculum that was originally horticulture. But then the women groups suggested that they don’t want to do fruits. Rather, they just needed African leafy vegetables. So we put that together and decided just to develop a new curriculum for African Leafy vegetables owing to the fact our institution has a mandate to develop curriculum.” (Admin 1, 2024).

When she was asked to give some highlights on some of the challenges facing the Green Business curriculum, she noted that the main challenge facing them was with the trainees, due to their age some of them find it hard to understand. She went on to explain that **gender role perception** was another challenge:

...the women groups comprising of majority of women, you find that they feel that some tasks allocated, such as building, are the role of men. You therefore find that most of the time, the trainers are the ones conducting the practical sessions and you see practical sessions is a part of their assessment (Admin 1, 2024).

Another challenge facing the curriculum is lack of **adequate teaching and learning resources** for delivery. She observed that, *“Materials such as projectors are few. For women groups, mostly for farmers, a trainer prefers using videos, but then the teaching and learning materials are not enough.” (Bukura Administrator, 2024).*

*Another challenge as she noted was the issue of ensuring that the curriculum is relevant. She explained, “The curriculum issue is ensuring the **relevance of content to evolving industry needs, maintaining updated materials, addressing resource constraints, and effectively integrating practical learning experiences into the curriculum.**” (Admin 1, 2024).*

Another college administrator 2 shared his views on the green business curriculum. He maintained that the institution had its own curriculum too, which covered dairy, horticulture and poultry as the major training programs offered by the institution. The administrator was asked to share what kind of challenges the institution experienced in relation to the Green Business Curriculum. He noted the following:

*The experience right now as we speak is the **high cost of examinations.** The exam fee was revised upwards just recently which had not been factored in the budget. This is the main challenge... of course we have a general high cost of living (Admin 2, 2024)*

During the interview with college administrator 3, on the question of green business curriculum, she acknowledged that the institution had the curriculum, with both basic and core units, thus a bit bulky. She went on to explain that the curriculum has **too much theory** and there is a need to integrate basic units and core units. She went on to explain, “*We feel that some of these basic units instead of subjecting the students to theory, why don’t we have them in core units?*” (Administrator 3, 2024).

She further went on to explain that students perform well in core units as compared to the basic units. However, she maintained, as per CDACC competency requirements, students need to pass both basic and core units. The administrator was asked to give some highlights on some of the challenges facing the youth curriculum. She noted that the main challenge, especially in horticulture level 3, is too bulky, bearing in mind that the students’ entry level is low and the timeline to cover the curriculum is rather short. She went further to note that the curriculum had too much theory as opposed to practicals. She posed and queried, “*why should you let students be subjected to theory and our end goal is farm operators who can be able to do practical work?*”

Another challenge facing the curriculum is **repetitiveness**. She noted that:

...there is a lot of repetition in terms of content. For instance, vegetable preparation value chain, vine preparation value chain, nursery management similarly the same. The same applies to tropical and subtropical fruits (Administrator 3, 2024).

The administrator was also asked to provide an overview of the women’s curriculum. She reported that it is easier to train women especially in already established groups. She noted that it is much easier to work with women than youth because they are not looking at the certificate. Asked to explain how the women’s curriculum was implemented, she explained that the trainers go to places where the women are located on specific days when they have group meetings. For instance, she explained the following about how they go about training women:

... For poultry production, just to give an example, we set up a poultry structure, give the women one month old chicks that are very young and use them as practical guides for the group. So, women learn by doing (Administrator 3, 2024).

The administrator was further asked to explain whether there had been a curriculum review. She noted that they had done one and pointed out some of the challenges facing the curriculum including but not limited to bulkiness. She added, “*we are looking forward to how we will do a full review as guided by CDACC.*”

3.4.1.2 Networking Role of TVET Institutions

College administrators were asked about the component of networking with other institutions. When admin 1 was asked about networking with other institutions, she agreed that there were networking activities going on. She went on to explain:

*...our networking activities with other institutions have included knowledge exchange visits, collaborative projects, joint research initiatives, and sharing of best practices in green business education and entrepreneurship. Courtesy of Zizi, we were able to visit the other institutions that are in the project... And in those visits, our main aim was to identify their strengths and what it is that we can do together. And we were able to identify areas of **collaboration**. (Admin 1, 2024).*

In regards to whether the benefits of networking to the institution, the administrator did agree by noting that “*networking has been beneficial to our institution as it has facilitated **learning opportunities**, collaboration, and access to resources and expertise from partner institutions, ultimately enhancing the quality and impact of our green business programs*” (Admin 1, 2024).

When the administrator 2 was asked about networking with other institutions, he stressed its importance observing that, “... **benchmarking is the main way to have a meeting with tutors, visit other agricultural/business enterprises.**” In addition, the administrator was asked to point out some of the challenges facing networking with other institutions. He explained that:

So far, we have not experienced any challenge because we have always received support; every time we want to visit any institution for networking, we have always received front approval and support (Admin 2, 2024).

3.4.1.3 Enhancement of Facility

When the administrators were asked about how their role has been enhanced through facility development, one of the administrators reported that indeed her institution had benefited from the green business project through enhancement of facilities such as the incubation centre.

3.4.2 Youth and Women Acquire Green Education and are (Self) Employed

Under this output, the mid evaluation analysis considered the following indicators: Enrollment, Certification, Assessment/Examination, Green Business Mentorship, Industrial Attachment, Employment Status, Startup Kits.

3.4.2.1 Enrolment in Green Business Education

The study was interested in establishing the number of enrolled trainees in green business training among the three institutes in Vihiga, Makueni and Kajiado. Table 10 shows the enrolment number as per the midline evaluation document analysis. Figure 2 represents enrolment of trainees by gender.

Table 10: Green Businesses Enrolment

Institution	County	Cohort	Enrolment
Bukura	Vihiga	1	108
	Vihiga	2	158
	Vihiga	3	164
	Vihiga	4	125
			555
Makueni	Makueni	1	189
Latia	Kajiado	1	74
	Kajiado	2	79
	Makueni	1	164
	Makueni	2	42
	Kajiado	3	47
			406
Total			1150

Source: Annual Review Report Quarter 1, 2024

Figure 2: Enrollment by Gender



Source: Annual Review Report Quarter 1, 2024

3.4.2.2 Assessment/ Examination

During the interview with the administrator 1, the question of how the assessment in green business training is done was also raised. She observed that assessment in green business training is typically conducted through a combination of written examinations, practical assignments, presentations, case studies, oral examinations, and project evaluations. She went on to explain that these assessments aim to evaluate students’ understanding of key concepts, application of skills, and ability to address real-world challenges in the green business sector.

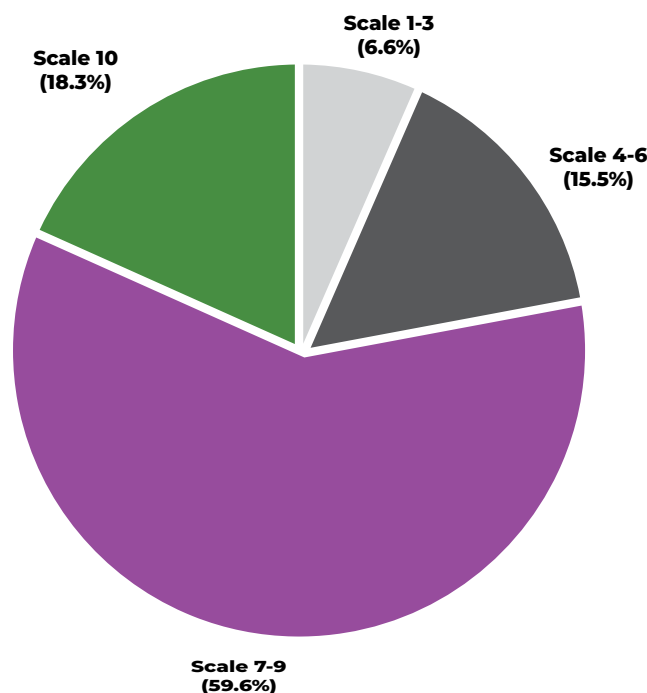
When the administrators were asked about some of the challenges facing examination in green business, one of them reported that the **examination fee** was too expensive for the ordinary poor. As such, there is a need to think of alternative sources of examination, which could be partnering with polytechnics or universities.

3.4.2.3 Industrial Attachment

Graduate Trainees’ Response on Industrial Attachment

Graduate trainees were asked to rate themselves on a scale of 1-10 about whether they were satisfied with the industrial attachment. Figure 3, shows the distribution of the graduate trainees on attachment.

Figure 3: Industrial attachment satisfaction rating by graduate trainees



Employers' Response about Industrial Attachment

Employers were also asked to provide an overview of what they felt about green business trainee's industrial attachment in terms of providing an overview of the program, roles and responsibilities, perception, benefits and successes.

An Overview of Industrial Attachment Program

When one of the employers was asked to provide a general overview of the attachment program, she explained that in her company, the program combines hands-on training, mentorship, and exposure to various components of the industry to provide interns with a holistic understanding and practical skills. They are also introduced to learning modernized techniques like the use of conical bags and nets under the guidance of experienced professionals who trained (Employer 1, 2024).

She went on to explain that programs emphasize regular check-ins with supervisors, ensuring interns receive ongoing support and guidance throughout their tenure. Furthermore, interns have the opportunity to explore different departments or projects within the company, enhancing their understanding of the sector. Professional development opportunities are also provided, allowing interns to enhance their skills and knowledge through workshops and training sessions and exhibitions. She points out that her company's internship program equips interns with the necessary tools and experiences to succeed in the green business sector.

Green Business Interns' Perception of Industrial Attachment Program

When asked about Green Business Interns' Perception, the employer reported that the trainees' perceptions vary, but overall there is a positive sentiment towards the program. They view employment opportunities as promising and value the networking opportunities within the agribusiness industry. Professional growth is recognized as well. Satisfaction with interns' overall performance typically falling within the range of 7 to 9 on a scale of 1 to 10.

The employer noted that some employers do remunerate the interns. She observed that in her company, there is a **daily payment** of KES 300-350 which serves as a significant motivator, reinforcing the belief that there are rewarding prospects in the green business sector. This financial support not only motivates interns but also allows for the inclusion of more youth from the community. The employer observed that:

*Through their assigned roles, interns have cultivated a positive attitude towards green business, demonstrating that meaningful work extends beyond traditional office roles. Their influence extends beyond their direct responsibilities, as **other youth on the farm look up to them** for their knowledge and proficiency, fostering a culture of learning and growth within the community (Bukura employer, 2024).*

Successes from the Green Business Attachment Program

The employers were also asked to share the successes stemming from the green business attachment program in their respective organizations. One of the employers explained the following:

Interns acquiring valuable skills and knowledge and making significant contributions to meaningful projects are key markers of success within the green business attachment program. Through hands-on experience and mentorship, interns develop practical skills and deepen their understanding of sustainable agriculture practices, where they are able to even produce their own manure from chicken and grow their organic vegetables. Armed with this expertise, they actively contribute to projects aimed at enhancing environmental sustainability, improving agricultural productivity, and promoting community development. Whether through innovative solutions to agricultural challenges, the implementation of sustainable practices, or the development of impactful initiatives, interns play a pivotal role in advancing the company's mission and objectives. These contributions not only benefit the organization but also empower interns to make meaningful contributions to the green business sector and broader society (Employer 2, 2024).

Green business attachment program has seen notable successes as some interns have **transitioned into employment** opportunities within the company or affiliated organizations. This transition provides the program’s effectiveness in not only equipping interns with valuable skills and knowledge but also in preparing them for long-term careers in the green business sector. One of the employers explained that:

Through their dedication, hard work, and demonstrated capabilities during the internship period, these individuals have earned positions that align with their career aspirations and contribute to the continued success and growth of the company or related entities. Such outcomes highlight the program’s ability to serve as a valuable talent pipeline, providing mutually beneficial opportunities for interns and employers alike (Employer 2, 2024).

Beyond these successes, the program’s impact extends to opportunities for interns to **represent their respective organizations** at county government exhibitions, where they foster invaluable networking connections. Employer 2 noted the following:

... delegating such responsibilities to interns not only empowers them but also expands the company’s reach and influence. Notably, one intern’s participation in a youth training event resulted in remarkable recognition, as he was selected to represent the youth of the sub-county, subsequently securing employment with the government. Such accomplishments showed the program’s efficacy in nurturing talent, fostering professional growth, and facilitating impactful contributions to both the company and the broader community (Employer 2, 2024).

The study was also interested in finding some of the challenges that interns faced. One of the employers explained that besides the success of green business interns’ program, there a a number of challenges including, “*interns’ skill gaps, adapting to the fast-paced nature of the industry, understanding complex sustainability concepts, and effectively communicating ideas.*” (Employer 1, 2024).

3.4.2.4 (Self) Employment Status in Green Business

In order to get an overall picture about employment of the green business graduates, the study examined their (self) employment status.

Previous and Current (Self) Employment Status of Graduates

Figure 4 shows graduates’ (self) employment status. Graduates were further asked to indicate the area/sector they were employed after undertaking green business training. Figure 5 shows graduates sector of employment

Figure 4: Graduates’ (self) employment status before and after green business

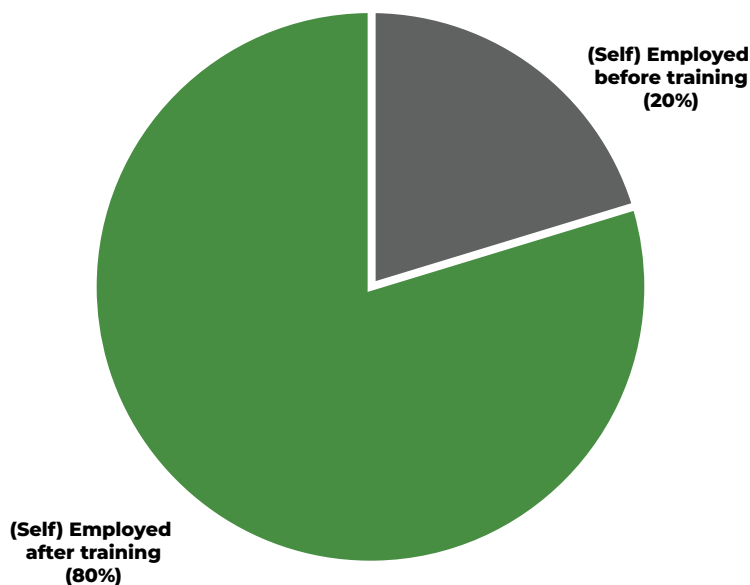
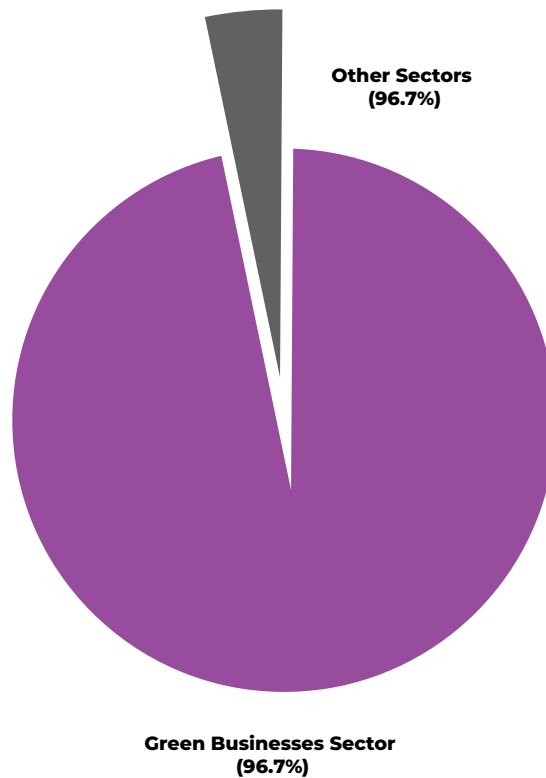


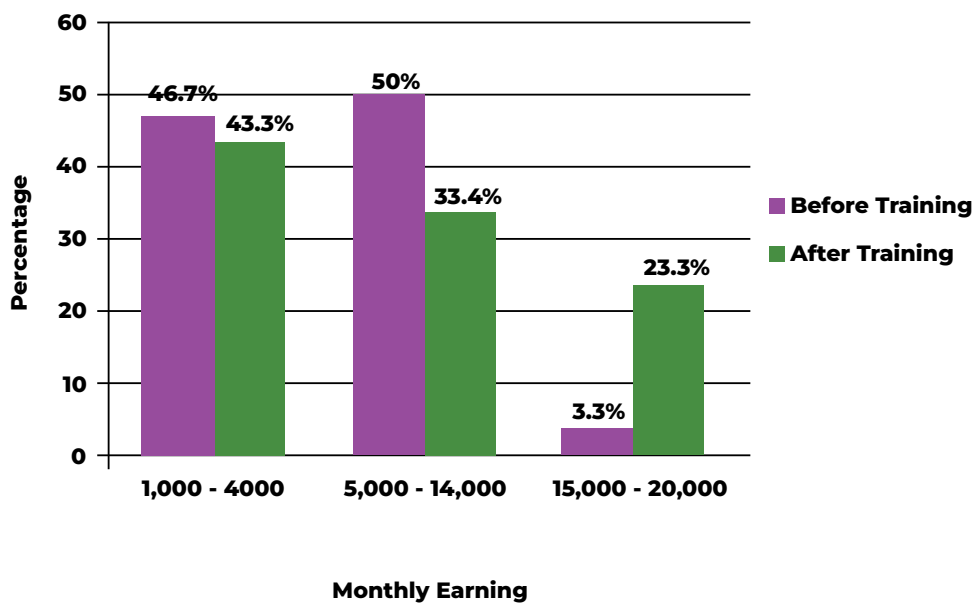
Figure 5: Graduates' sector of employment



Average Monthly Earning before and after Training in Green Business

The study examined the average monthly earning before training among graduates in green business. Figure 6 shows the average monthly earning before training in green business training. The chart indicates an overall shift from lowest earning levels (1,000-4,000 per month) to higher earning levels, with those at the lowest and intermediate levels decreasing from baseline to endline.

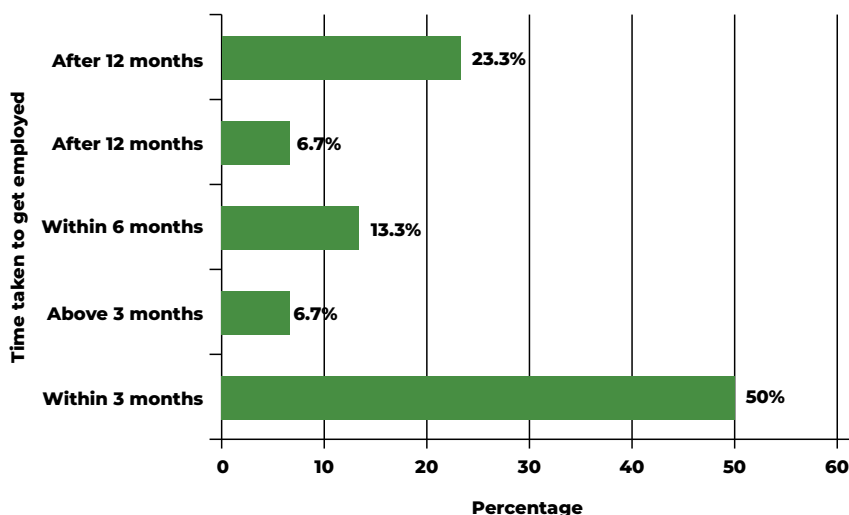
Figure 6: Average monthly earning before training in Green Business Training



Time taken to get employed after Completion of Green Business Training

Figure 7 presents time taken (in months) to get employed after completion of the green business training.

Figure 7: Time taken to get employed after completion of green business training



3.4.2.5 Startup Kits

The study was interested in establishing whether the trainees had been given startup kits to begin their own business. According to the annual review report Quarter 1 2024, a total of 324 graduates had been supported by the startup fund.

Whether Received Startup Kits

Graduate trainees were asked to indicate the kind of startup funds they received. Bukura FGD members indicated the kits played a pivotal role in initiating their green businesses including dairy farming, poultry production, and banana tissue culture facilities. One of the FGD members had the following to say:

*Yes, we received a startup kit which was instrumental in **kick starting our agricultural initiatives**, such as acquiring cows for dairy farming, setting up poultry production units, and establishing banana tissue culture facilities (Bukura Women FGD Participant 9, 2024).*

Another Bukura FGD group member reported that they received the startup kits as a group. She noted that this arrangement bolstered their group’s **confidence** and facilitated **collaboration**:

Indeed, our group was the recipient of the Green Businesses Startup Funds, and it was a collective endeavour. This support came at a crucial juncture for us, enabling our group to embark on our agricultural ventures with confidence. (Bukura Women FGD Participant 20, 2024).

Kajido FGD also reported that they had received the kit. They reported that the Green Businesses Project did not provide direct funds but instead they were given vegetable seeds, one-month-old chicks and chemicals for making detergents for the group. These resources were provided to address the needs of the group following their suggestions.

Development Of Business Plan Before Receiving The Startup Funds

Graduate trainees were asked to indicate whether they had developed a business plan before receiving startup kits. An overwhelming majority (96.7%) of the graduates indicated that they had developed a business plan before receiving the startup kits. Only 3.3% of them indicated that they had not developed.

Graduate Experience In Developing Business Plan For Startup Funds

Graduate trainees were also asked about their own experience in developing the business plans for startup kits. Table 11 shows the distribution of the respondents on their experience in developing the business plans.

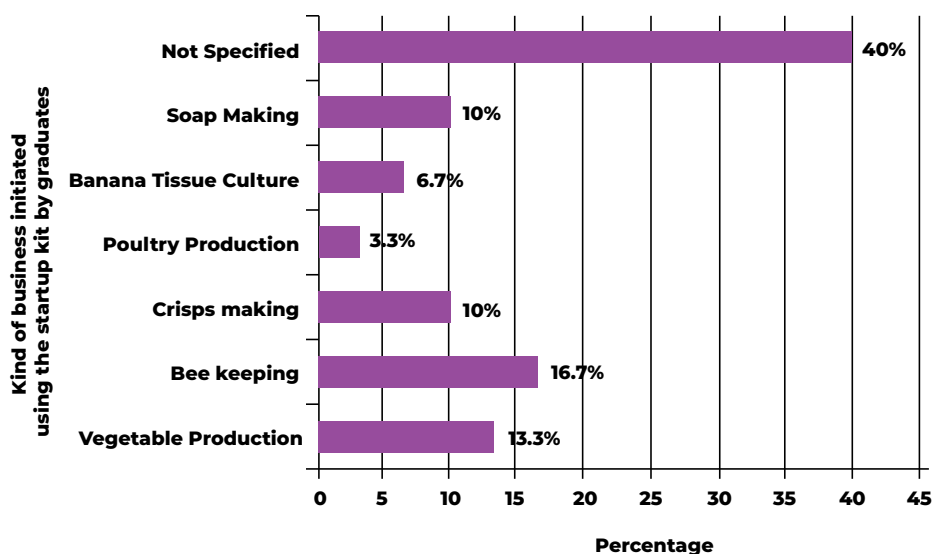
Table 11: Graduate Experience In Developing The Business Plans For Startup Kits

#	Statement	Yes %	No %
1	I lacked technical expertise in developing business plan	66.7	33.3
2	I lacked practical experience in business operations and planning	63.3	36.7
3	I had difficulty in articulating ideas and strategies when developing the business plan	43.3	53.3
4	I lacked proper guidance when developing the business plan	33.3	66.7

Project(s) Initiated Using Startup Kits

Figure 8 shows the distribution of the respondents on the kind of project(s) / business participants initiated using the startup kit they received. For the 40% of the graduates that did not specify the kind of business they had initiated using the startup kit, it could be among those who had not yet received the kits.

Figure 8: Kind Of Business Initiated Using The Startup Kit By Graduates



Extent To Which Business Of Graduate Trainees Improved Their Finances

The graduate trainees were also asked to indicate the extent to which their respective business improved their financial well-being. 43.3% of the graduate trainees indicated that their **financial wellbeing** had improved to some extent while another 26.7% of them felt that their well-being had improved to a greater extent. However, 30% of them felt like their wellbeing had not improved. This could be among those who had not benefited from the startup kit.

In the Bukura FGD women group discussion, one of the group members reported that the kit has a lot of economic benefits, emphasizing the transformative impact of the startup funds on their group’s agricultural endeavors. She observed that:

*Yes, as a group, we were fortunate to receive the Green Businesses Startup Funds, and it has been a game-changer for us. This support not only provided us with the financial means to kickstart our agricultural initiatives but also served as a **catalyst for collaboration and teamwork** within our group. In essence, the Green Businesses Startup Funds, coupled with the resources, training, and mentorship, have empowered us to turn our agricultural dreams into reality. (Bukura Women FGD Participant 25, 2024).*

Latia-Kajiado Women Group offered similar sentiments about the impact of the startup kits. The members maintained that the program had great impact on the lives of the group members since they were able to start and run their own businesses, generate income in order to provide for their families, or directly provide food for their families:

*After acquiring this knowledge we were able to start our own business. There are many different businesses. For example after growing vegetables, one can open a kiosk and get some profit which is self-employment. Also you can open a shop and put other things such as milk or any other thing that can be sold in a shop...We also got the knowledge on how to **differentiate profits and losses**...This has helped us to earn money... which is used to buy food and raise school fees for the children (Latia Women FGD Participant 8, 2024).*

3.4.2.6 Mentorship Program Youth Trainees' Response on Mentorship Program

The study was interested in finding out the nature of mentorship program in terms of sessions and whether satisfied and about industrial attachment.

Mentorship Sessions: During the study, youth trainees were asked whether they had gone through the green business mentorship program. A vast majority (86.7%) of the graduates agreed that they had gone through green business mentorship sessions. However, 13.3% of them had not gone through mentorship sessions. Regarding ongoing trainees undergoing mentorship sessions, 88.4% of them agreed that they had gone through the sessions while 11.6% of them had not.

During the FGDs with women's groups in Bukara, Makueni and Kajiado, all participants confirmed they had gone through the mentorship program. When asked about their experience, one participant noted, *"Yes, the mentorship program has been incredibly useful as it provides **personalized guidance, insights, and support tailored to our specific needs and challenges.**" (FGD1 member 8, 2024).*

The group confirmed that they have mentors who check the progress of the group and ensure that the group get professional training from experts of various fields depending on the preferences of the group member.

*In our group, we have Teacher Hellen who ensures that we get professional training from **experts of various fields** depending on what the group would want to learn. This is helpful to us because she is able to access these professionals for us since we cannot access these professionals ourselves (Latia Women FGD Participant 3, 2024).*

Mentorship Program Satisfaction

Makueni women group members expressed their satisfaction that the program helped them to acquire knowledge and experience shared during training sessions, enabling them to **implement best practices** in poultry farming. Participant 4 shared, *"I was taught that there are ways in which we should keep records, whether it's the costs we've incurred on food we should keep records and then calculate all the costs to determine if we are making a profit or a loss." (Makueni Women FGD Participant 4, 2024)*

Another participant noted that the training instilled a commitment to **sustainable farming practices** among them. She had the following to say, *"We apply chicken manure to our farms which helps to nourish the soils and maintain soil fertility instead of using chemical fertilizers, which can harm the soil's natural life." (Makueni Women FGD Participant 2, 2024)*

Participant 6 from the discussion expressed her dissatisfaction with the mentorship program as she requested that they be **monitored after the training** to check upon their progress. She went ahead and observed, *"They should come to see how we have worked, even when we are done with classes, don't just treat us as if the lessons are over." (Makueni Women FGD Participant 6, 2024).*

Mentors' Response on Green Business Education Mentorship Program

During the interview, mentor 1 explained how mentorship sessions were conducted:

Mentorship sessions are typically conducted through a combination of face-to-face meetings and group workshops or seminars. These sessions involve personalized guidance and support tailored to the individual needs of the mentees. Mentors provide advice, share experiences, and offer practical insights to help mentees develop their skills and achieve their goals in green business training (Mentor 1, 2024)

When asked to point out the number of sessions held during the current quarter. He went on to explain, "According to ADS, we should conduct 12 sessions. But for me, because of my passion and love for farming, I normally have more sessions with farmers, since I believe we as mentors are the only ones who understand these farmers on the ground." (Mentor 1, 2024).

Kajiado green business training mentor was also interviewed in order to examine the implementation of green business education. When she was asked whether as a mentor she received **remuneration**, she went on to explain that she received it only once. Otherwise the mentor shared that she chips in her own money to ensure the sustainability of startups projects.

Despite the successes of the green business mentorship program, the study examined some of the challenges facing the program. During the interview, mentor 1 was asked to state some of the key challenges experienced in relation to the mentorship program. The mentor highlighted the following: limited access to resources and funding, inadequate infrastructure for practical training, insufficient awareness and understanding of green business practices, regulatory barriers, and resistance to change within traditional agricultural practices. The mentor explained the following:

***Finding mentors** who possess the necessary expertise and availability to support mentees effectively can be challenging, coordinating mentorship sessions around mentees' and mentors' busy schedules can be difficult, leading to missed opportunities for engagement and learning, maintaining consistent participation and commitment from both mentors and mentees throughout the duration of the program can be challenging as well as affecting the effectiveness of the mentorship relationship. The **involvement of farmers in church activities**, particularly on days such as funerals where they are required to assist in various tasks, can conflict with mentorship sessions. Mondays and Thursdays, often reserved for church events, Fridays are for kasha, Saturdays and Sundays are set days for burials and Sundays church services. These are particularly challenging, leading to missed sessions due to obligations within the community and many farmers, especially women, are responsible for **household duties alongside their farming activities**. Balancing personal errands and responsibilities at home before attending mentorship sessions can lead to delays or reduced participation in training activities (Mentor 1, 2024).*

On the main challenges the mentor experienced in relation to the mentorship program in green business training in Makueni, the mentor went on to describe the following:

*One challenge encountered during the training sessions is the **uneven attendance** between teachers and students. While teachers diligently attend, the number of students present is often low. Therefore, the trainer is required to repeat these sessions, placing additional strain on the instructional process. As a mentor, I find myself having to re-teach these concepts to ensure all participants receive broad understanding (Mentor 2, 2024).*

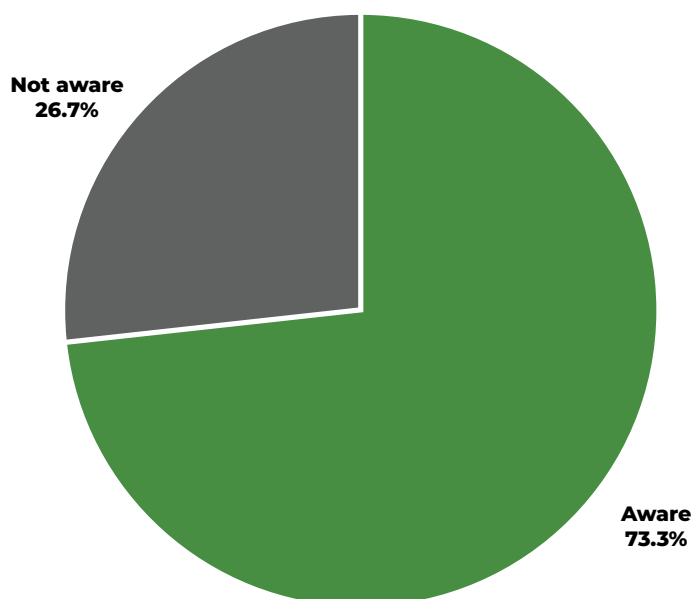
During the interview, Mentor 3 from Kajiado was also asked about the challenges associated with the mentorship program. She indicated that grouping women for training and cultural barriers were the main challenges. On **cultural barrier** she had the following to say:

Maasai men are still constrained by retrogressive cultural practices and they do not want women to make their own money so they think I am enlightening women to own money and their own independence. Because of these cultural barriers women sometimes report violence occasioned by attendance of this green business education (Mentor 3, 2024).

3.4.3 Green Business Known and Appreciated by the Broad Public Participants' Awareness of Green Vocational Training Offer

The study was also interested in establishing whether the members of the community in the project area were aware of the green vocational training offer. Figure 13 shows the distribution of the respondents in the project area on awareness of green vocational training offer.

Figure 9: Participants' awareness of green vocational training offer



As shown in Figure 9, the majority (73.3%) of the respondents who participated in the study indicated that they were aware of green vocational training. However, another 26.7% of them were not aware.

When the members of one of the FGDs were asked whether the community was aware of the green vocational training, most of them did agree although they shared that at the beginning they were not sure about the achievements of green business training but now the community is even asking when will be the next round of the offer. Some more members of the community want to register in the groups but they are already full, another member commented.

A few members of the public associated with women groups in the project areas were asked to give their opinion about their awareness of green skills available in vocational training. They shared the following viewpoints:

- Green business offered learners with knowledge and skills for employment opportunities
- Green business training offers practical agricultural skills for self-employment,
- Agricultural training provides learners/students with innovative skills in agriculture,
- Green business training transformed community in terms of exposure to modern farming practices,
- The training has been able to transform the day to day livelihood needs of youth and women in the community through income generating activities

From the responses shared by some of the members of the public, it was evident that the broader public has a positive attitude towards green business training as it is invaluable not only to youth but also to women through organized groups.

3.4.4 Partner Organizations Capabilities and Capacities

The midline evaluation sought to establish the effectiveness of partner organizations capabilities and capacities enhancement and professionalization. In order to measure this output, the evaluation considered staff training. Quarterly Review Document Analysis revealed that two partner organisations namely, Zizi and ADS had been trained on Monitoring and Evaluation, Core Humanitarian Standards (CHS) and Complaints Reporting Mechanism. Owing to the training that the two organizations have had, one of the representatives of the two organizations noted that ADS fully carries out the project implementation activities while Zizi conducts monitoring and evaluation of the green business project.

When one of the partner organization members was asked to suggest other additional training needs, she observed the following:

We strongly advocate for the inclusion of comprehensive training in fundraising, financial administration, and data analysis to bolster our capacities in green business education. Equipping our team with robust data analysis skills is essential for evidence-based decision-making and continuous improvement since we are really on the ground with farmers (ADS Representative, 2024).



3.5 Progress level of green business project based on output

Table 12: Progress level of green business project based on output

Outcome	Baseline (Quantitative and Qualitative)	Target Value (Quantitative and Qualitative)	Midline	Comments
1,500 women and young people in Kajiado, Kakamega, and Makueni County acquire technical, economic, and life skills	10 % of trainees are completing TVET programs.	80% of the trainees enrolled (1,200) 60% being women complete their TVET program.	<p>Enrollment As per Midline evaluation document analysis, 76.67% (n=1150) of the trainees enrolled in Green business training. When classified by gender, the distribution of trainees enrolled in green business is as follows: 652(56.52%) women and 498 (43.30%) youth (205F, 293M). 56.7% (652/) of the trainees enrolled are Women</p> <p>To date, the following have been enrolled: Bukura (555); Makueni (189); Latia (406). Total enrolled 1150 graduates</p>	Difference between target and midline values: Nearly meeting target 80-76.7=3.3%
Output				
1. The role of TVET Institutions in green skills development is enhanced	45% of the TVET institutions (5 out of 11) have Green Business and Eco-Entrepreneurship vocational training curricula.	66% of identified TVET institutions (4 out of 5) have adopted the green skills curricula already developed by GIZ/GOK for their training.	All the 3 institutions out of 5, (60%), including Bukura, Makueni and Latia have adopted green skills curricula	The other two institutions are networking institutions i.e, Miramar International and Baraka Agriculture College.

Outcome	Baseline (Quantitative and Qualitative)	Target Value (Quantitative and Qualitative)	Midline	Comments
			<p>Curriculum Review Some of the institutions noted that they had been involved in green business curriculum review, but still awaiting a compressive review with CDACC Institutions like Bukura take the lead role in curriculum development. Others like Latia have been involved in the review process. The green business curriculum was reported as bulky, theoretical and with overlaps 96.6% and (91.6%) of trainees respectively reported that the green business curriculum was effective in terms of its quality, organisation and structure.</p> <p>Networking The three institutions namely Bukura, Makueni, Latia have had fruitful networking activities with other institutions including knowledge exchange visits, collaborative projects, curriculum review, joint research initiatives, and sharing of best practices in green business education and entrepreneurship. Areas of exchange in different institutions: Bukura (curriculum); Baraka (apiculture); Latia (green house) Some of the challenges facing networking activities include lack of adequate financial resources to meet networking needs, technological adoption and fear of competition</p> <p>Assessment/Examination The midline evaluation revealed that institutions have both institutional-based internal assessment for women groups and external assessment by TVET CDACC for regular green business trainees.</p> <p>Certification Document analysis provided the following data in relation to certification To date, the following have been certified: Bukura (400); Makueni (0); Latia (291). Total certified 691 graduates.</p>	<p>Based on both quantitative and qualitative midline analysis, it was evident that the role of TVET Institutions in green skills development has been enhanced in terms of the following: participation in curriculum reviews and networking activities.</p>

Outcome	Baseline (Quantitative and Qualitative)	Target Value (Quantitative and Qualitative)	Midline	Comments
2. Youth and women receive a green education and find green (self-) employment after completion	There is high unemployment among youths	By 2024, 1,500 youth and women have been placed in vocational training institutions and 80% thereof (1,200) have graduated	Number of youth and women enrolled in vocational institutions 76.7% (1150) youth and women have been enrolled in vocational training institutions, namely Bukura (555); Makueni (189); Latia/Makueni (406) 60% (691) have graduated: Bukura (400); Latia/Makueni (291) ; Makueni (0)	Difference between target and midline. 1150 trainees enrolled out of targeted 1200 trainees; Thus 50
	There is high unemployment among youths	12 months after completing their training, 70% of graduates (gender disaggregated) report an increase in monthly income of at least 20% through the implementation of the skills acquired	Based on the midline evaluation analysis, 81.2% of graduates reported an increase in monthly income (78/96*100). (Number of midline respondents employed divided by the total number of midline respondents, multiplied by 100) 66 women + 12 youth graduates = 78 (40% of (self) employed * 30 graduate trainees = 12); 66 women + 30 graduate trainees = 96 respondents	No employability tracer study to track the number of employed green business trainees, and their income levels.
	63% of graduate's households are employed on-farm and derive their livelihood/ income from on-farm activities	12 months after completing their training, 70% of graduates (gender disaggregated) report an increase in a monthly income of at least 20% through the implementation of the skills acquired.	96.7% of the graduates in the midline were employed in green businesses sector 33.3% of graduates in the midline work in other sectors including transport, construction among other menial jobs.	There is need to conduct a tracer study to track the employability of green business training of graduates
	There is no established fund that can be used to start a business.	A fund for startups has been set up and at least 50% of the graduates have been supported by a startup fund	There is an established business startup fund that has been set As per midline evaluation analysis, so far, there are 324 trainees who have benefited from the start up fund out of a total of 691 trainees who have been successfully trained. Thus: 324 / 691 * 100 = 46.88% (Number of trainees benefitted from the start up fund, divided by total trainees successfully trained, Multiplied by 100).	Difference between baseline and midline At least 46.88% have been supported by a startup fund out of a target of 50%
	Two of the local practitioners support the training and establishment of youth and women-led green businesses	Number of trainees under mentorship, divided by the number of enrolled trainees multiplied by 100	Number of mentored trainees = 691 Number of Enrolled Trainees = 1150 60.09% of agripreneurs support the training and establishment of youth and women-led green businesses	A majority (60.09%) of green business graduates (agripreneurs) are supporting the training and establishment of youth and women-led green businesses

Outcome	Baseline (Quantitative and Qualitative)	Target Value (Quantitative and Qualitative)	Midline	Comments
3. The vocational training offer in green competences is known and appreciated by a broad public	The TVET system lacks social recognition. The public is not aware of the green skills available in vocational training.	At least 60% of the surveyed population in the project area is aware of the green vocational training offer. The majority of them can justify a positive opinion.	Those aware of green business divided by the total surveyed population in the project area multiplied by 100. Thus, 73.3% of vocational training offered in green competences is known and appreciated by a broad public in the project area. The training: Green business offers learners with knowledge and skills for employment opportunities Green business training offers practical agricultural skills for self-employment This agricultural training provides learners/students with innovative skills in agriculture This training has transformed our community in terms of exposure to modern farming practices This training has been able to transform the day to day livelihood needs of youth and women in our community through income generating activities such as poultry farming, dairy farming, tissue culture banana, bee keeping, Africa leafy farming	A majority (73.3%) of the public in the project area are aware of the green skills available in vocational training. This surpasses the target by 13.3% (73.3 - 60).
4. The capabilities and capacities of the partner organizations (Zizi and ADS) are enhanced and professionalized	The partner assessment showed the training needs of the partner organizations.	The two partner organizations are trained on The Core Humanitarian Standards and complaints mechanisms are integrated into the project Capability of the partner organizations in financial administration, fundraising, M&E, Skill Up-approach has increased and by 2024, 80% of project management is carried out by them.	Zizi and ADS have been trained on Monitoring and Evaluation, Core Humanitarian Standards (CHS) and Complaints Reporting Mechanism (CRM). ADS is fully implementing the green business project while Zizi is actively involved in monitoring and evaluation of green business project.	Certain capabilities of the partner organizations (Zizi and ADS) have been enhanced and professionalized. Over 80% of green business project is carried out by partner organizations.

3.6 Challenges facing green businesses education

Green business trainees including graduate, ongoing trainees and women trainees were asked to highlight some of the key challenges associated with green businesses project. Others who shared the green businesses challenge included mentors, employers and partners.

Graduate Responses on the Challenges Facing Green Business

The challenges associated with green businesses education, as reported by graduate trainees, included the following: time management, few training manuals, financial challenges and delayed certification. One of the graduate trainees noted the following:

“I never got the certificate... Furthermore, there is just a lot of farm work than class work..., there is a lack of equipment..., there are only a few farms.” (Graduate Trainee, 2024).

Time management: Graduate trainees highlighted their challenges in coordinating schedules between themselves, mentors, and trainers. They noted instances where agreed-upon meeting times were not adhered to by all parties, leading to disruptions and inefficiencies in the learning process. Furthermore, delays during practical sessions, whether caused by trainers, trainees, or mentors, further compounded the difficulties in managing time effectively.

Financial support challenges: Many trainees expressed difficulties in affording the necessary equipment required for practical sessions. Given that the program was designed for individuals starting out in the industry, the financial strain posed a significant obstacle, as the trainees are still grappling with establishing themselves financially.

Climate effects: Access to water during dry seasons was identified as a challenge, particularly for agricultural activities reliant on consistent water sources.

The imbalance between farm work and classroom instruction: Graduate trainees noted a significant disparity between the emphasis placed on hands-on farm work and traditional classroom learning. While practical experience on the farm was valuable, trainees emphasized the importance of complementing this with theoretical knowledge gained through classroom instruction.

Lack of equipment: Graduate trainees highlighted the challenge of inadequate equipment, which hindered their ability to fully engage in practical sessions. Additionally, the limited availability of farms for hands-on experience posed a barrier to their learning process.

Delayed Certification: The issue of delayed certification and instances of not receiving certificates highlighted significant administrative inefficiencies that impeded the progress of graduate trainees. Despite completing their coursework and graduating from the program, some trainees reported that they had not yet received their certification. Despite assurances from program organizers that certificates would be provided, these promises remained unfulfilled, leaving trainees in a state of limbo as they awaited official recognition of their achievements.

Ongoing Trainees Responses on the Challenges Facing Green Business

The ongoing trainees outlined numerous challenges they faced during their training program, highlighting various areas that require improvement. These challenges included the absence of educational exposures and trips, lack of tools and equipment during practical lessons and limited resources for farm practical's underscored significant gaps in resources and opportunities for hands-on learning.

Field exposure: Additionally, trainees highlighted their limited exposure, emphasizing the need for more comprehensive experiences within the industry to augment their skill sets. Respondents expressed dissatisfaction with the frequency of exposure trips, noting that per cohort, they were only afforded two opportunities. They perceived these trips as insufficient for acquiring the depth of knowledge and practical understanding they desired. Consequently, they felt that the restricted number of field exposure opportunities hindered their ability to gain a thorough grasp of industry details, knowledge and impeded their overall learning experience.

Theory vs Practical: Trainees also expressed concerns about the imbalance between classwork and practical sessions, as well as the insufficient commitment of some teachers, particularly in digital classes.

Financial Issues: Moreover, financial constraints posed challenges for trainees, including the need to pay for industrial attachments and exposure, inadequate upkeep provided, and accommodation issues. Additionally, insufficient capital for learning farms, inadequate irrigation water, lack of support for dairy farming products, and inadequate farm implements further compounded their difficulties.

Content: Some modules like in tissue culture posed challenges to understanding and retention, particularly for individuals of older age, indicating the need for tailored instructional approaches and additional support for learners with different learning abilities.

Climate Effects: Climate fluctuations presented challenges to agricultural practices, impacting the application of learned techniques and strategies. Teaching of adaptation to environmental changes and implementation of resilience measures are necessary to mitigate the impact of climate variability on agricultural businesses.

Cultural barriers: These barriers may have influenced the learning environment and interactions among trainees, underscoring the importance of fostering inclusivity and cultural sensitivity in training programs to ensure equitable participation and engagement.

Mentorship: Limited follow-up support after training was noted as a challenge, impacting the application and retention of learned concepts. Establishing post-training support mechanisms and mentorship programs can facilitate continued learning and skill development beyond the training period.

Limited resources: High costs of seeds presented financial barriers to business expansion and sustainability, highlighting the need for affordable input options and market access for entrepreneurs. Collaboration with seed suppliers and government agencies can help address this challenge and promote access to affordable inputs for trainees.

Limited Availability of Learning Materials: The trainees indicated that while they possessed some learning materials, their availability were severely limited, leaving many participants without adequate resources. This scarcity hindered the ability of every individual to access essential materials necessary for their educational journey.

Women Groups Response on the Challenges Facing Green Business

When Bukura Women Group members were asked about the challenges facing green businesses project, they appreciated what the project had achieved but not without some challenges. A number of members shared their views on the main challenges that faced the green business project. One of them reported the following: *The main challenges faced in the Green Businesses Project are the issue of financial constraints, time management, and lack of veterinary support.*

On gender-related challenges faced by women in confronting **retrogressive cultural norms and traditions**, another member of the group explained that:

In our agricultural context, women encounter numerous gender-related challenges rooted in retrogressive cultural norms. One prominent issue is the social stigma against female participation in tasks traditionally deemed 'men's work,' such as building structures like cow sheds. Despite women constituting the primary workforce within our group and actively contributing to all aspects of agricultural production, including livestock management and infrastructure development, we face discrimination and marginalization based on gender stereotypes. This not only undermines our abilities but also restricts our access to resources and opportunities necessary for our agricultural enterprises to thrive (Bukura Women FGD Participant 3, 2024).

Another participant emphasized a significant challenge faced by women in the group as being bound by cultural duties that prioritize **traditional gender roles** over participation in agriculture. She noted:

Another significant challenge that women in our group face is being bound by cultural duties that often prioritize traditional gender roles over their participation in agricultural activities. Deeply entrenched cultural norms dictate that women should prioritize household duties and caregiving responsibilities, relegating their involvement in agriculture to a secondary role. As a result, women may encounter resistance or disapproval when attempting to allocate time and resources to agricultural pursuits. This cultural barrier not only limits women's autonomy and economic opportunities but also perpetuates

gender inequalities within our community. Addressing this challenge requires concerted efforts to challenge and reshape cultural norms, promote gender equality, and create supportive environments that empower women to fully participate in agricultural entrepreneurship (Bukura Women FGD Participant 4, 2024).

Makueni Women Group members had their fair share of challenges in the green business project. One key issue highlighted by one of the participants was the **lack of practical experience and resources** essential for effective project management like poultry farming. She went ahead and noted that:

During the training there was lack of incubators and we missed out on practical experience in managing the incubation process, such as temperature and humidity control, turning eggs, and monitoring embryo development which led to gaps in knowledge and skills needed to successfully manage poultry operations (Makueni Women FGD Participant 1, 2024).

During the discussion, financial constraints emerged as another formidable challenge faced by participants, particularly in the context of infrastructure development. Some participants in the group expressed their **inability to afford construction** of proper chicken house as per the training guidelines. Participant 2 explained that:

We lack money to construct proper coops for our chickens as we were taught hence requesting if we would be given startup funds to construct communal chicken coop... A person does not have the money to build a chicken coop on their own, so if we can get assistance to build a communal chicken coop together in one place, it would be helpful.” (Makueni Women FGD Participant 2, 2024).

Transportation emerged as a significant logistical hurdle for participants, intensifying the challenges of accessing training sessions efficiently. A good number of group members cited the **lack of financial resources for transportation** as a key impediment, resulting in early departures and significant time consumption. Compounded by the inability to borrow fare from spouses, participants faced difficulties in attending training sessions regularly, hindering their learning progress and engagement with the program. One of the participants expressed that, *“We lack money for transport... and are unable to borrow fare from our husbands hence we have to leave very early, which consumes a lot of time.” (Makueni Women FGD Participant 6, 2024).*

Moreover during the interview, participant 6 noted that women in the community are facing significant obstacles in their poultry business ventures due to a **lack of financial support from their husbands**. Despite their efforts to establish and maintain poultry operations, they are unable to access the necessary funds to sustain and expand their businesses. She observed that:

You can find that we have come here and we have not stopped the activities we are doing, so that food is available for others and the ones we depend on for our well-being...if we could find financial assistance would have helped us because there are other things we will do with it such as the chicken lines until we do it and these old people don't want to give money... (Makueni Women FGD Participant 6, 2024).

During the interview, **gender issues** also emerged. One of the participants noted that the situation presents a formidable challenge for many mothers seeking to construct a chicken house, there is resistance from our elders or husbands who own the land. Conflicting interests between spouses complicate matters, with the husband's refusal to grant permission. One of the participants observed that:

We lack land to build the chicken coop... since our husbands own the land, and they do not allow us to build on those lands ... perhaps someone wants to build chicken coops... but it's on the husbands' land, and he tells me that I cannot build a house there. Despite being instructed to build a house in a certain way, the husband refuses, stating that no house was constructed there... (Makueni Women FGD Participant 4, 2024).

Latia Women Group members in Kajiado also shared some of the challenges they faced in the green businesses project. Among the challenges, the biting **effects of climate change** was number one. One of the members pointed out that climate effects are one major challenge in agricultural production especially during the dry season. This is because Kajiado is one of the arid and semi-arid regions in Kenya meaning that the region rarely receives regular rainfall per year.

...Water is a major challenge in our operations since we do not have a dam or a borehole around. If possible, we would like to be assisted in drilling our own borehole because we have a large land where we can farm and make huge profits (Latia Women FGD Participant 8, 2024).

On gender issues in the green business project, one of the participants in the group observed that according to Maasai culture, chicken are not regarded as part of their livestock. They are viewed as birds with no or little economic benefits. The member observed:

According to our Maasai culture, our 'Wazee' do not like chicken as they regard them as birds...When we keep the chicken at home, our husbands disregard the practice... they see it as small things we are doing.... If he finds you feeding the chicken he gets angry because he sees that you are doing something that you should not be doing. He only wants you to go feed the cows and goats... (Latia Women FGD Participant 4, 2024).

Institutional Administrators' Responses on the Green Business Challenges

The institutional administrators were also asked to indicate the kind of challenges facing green business education. Administrator 1 indicated that there was the issue of resource constraints and ensuring relevance and sustainability of the initiative. She explained, "**challenges associated with the Green Business Project in our institution include resource constraints, ensuring relevance and sustainability of the initiatives, addressing stakeholder engagement, and overcoming regulatory barriers.**" (Admin 1, 2024). When administrator 2 was asked to point out the challenges facing the Green Business Project, he noted the "**increase in fees for exams is a great challenge; then number two is full scholarship given to students. I think this is a challenge especially when it comes to co-ownership of the programme and sustainability in future.**" (Admin 2, 2024).

On the main challenges in Green Business Education, Administrator 3 reported that the main challenges included **curriculum, certification, and recruitment of the youths**. In her explanation, she stated that recruitment of women groups was much easier because the women groups already exist and they have their needs and you only supplement what they have. She noted the following in her explanation:

... the women groups are groups that were already existing and they have their needs so you are only supplementing what they have. Of course different groups will have different dynamics in their way of doing things... and this is much easier. For the youth, they are quite diverse and there is a disconnect between what the school or how the institution operates and how the project itself and the information that the student received. (Administrator 3, 2024).

The administrator further stated that there was a cultural challenge. This is especially because the project is in Maasai land. Most of the students come from the Maasai community who are mostly pastoralists and therefore there is a challenge in trying to **change their mindset** in order for them to accommodate horticulture. She noted that, "**this project is in Maasai land in our case and most of the students are from the pastoralist community. Therefore, they know cows, so changing their mind to horticulture is a challenge.**" (Administrator 3, 2024).

Mentors' Responses on the Challenges Facing Green Business

Mentors from Bukura, Makueni and Kajiado were asked to give general challenges associated with green business in general. One of the mentors explained that the project is generally good, especially startups. However, there is a need for **more financial support**. The mentor observed that:

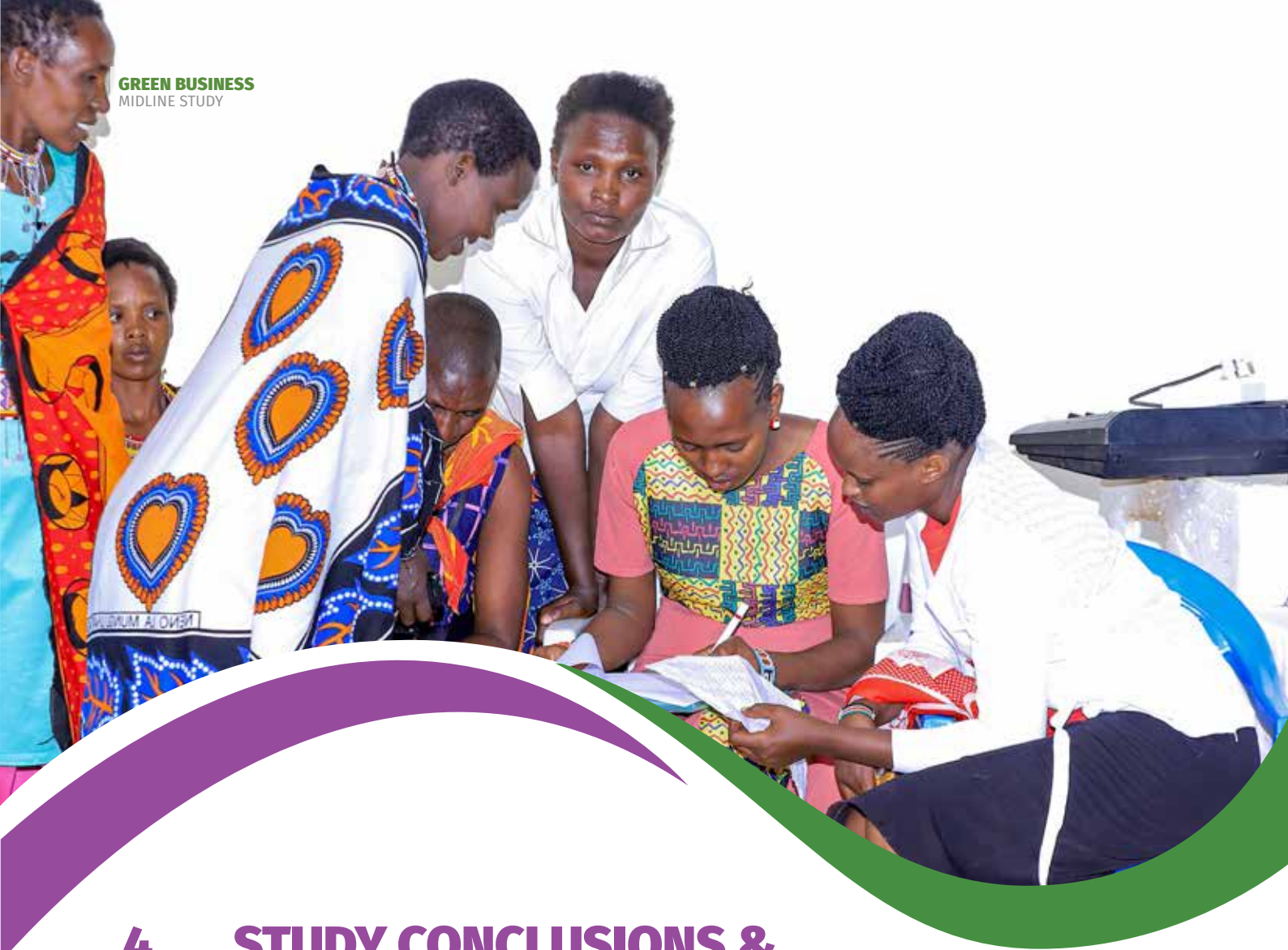
Sometimes I had to chip in my own money to ensure the sustainability of this program including looking for a vet and meeting the cost. In addition, the other challenge is constant drought which cannot ensure the sustainability of the startup especially kitchen gardens.

Partner Organizations' response on the challenges Facing Green Business

When asked about the current challenge they encountered in green business project implementation, the ADS representative said: *"The primary challenge revolves around securing **adequate funding** for our green business resources."* The representative explained: *"Additionally, we're grappling with staff transitioning, which directly impacts our knowledge management efforts."* On further explanation, another staff from ADS Kenya explained the following with some concerns:

...we find ourselves navigating a complex landscape shaped by county government issues. These bureaucratic hurdles not only impede the smooth execution of our initiatives but also demand considerable time and resources to navigate effectively. Furthermore, a glaring disparity emerges in the training landscape, where we observe a significant underrepresentation of youth and men. This inequality not only undermines the inclusivity of our programs but also hampers the diversity of perspectives crucial for innovative problem-solving and sustainable development. As we confront these challenges head-on, it's imperative for us to foster partnerships, advocate for policy reforms, and redouble our efforts to ensure equitable access to training opportunities for all (ADS representative 2).





4 STUDY CONCLUSIONS & RECOMMENDATIONS

4.1 Conclusions

Based on the findings, the study concluded the following:

The role of TVET Institutions in green skills development has been enhanced to some extent through their involvement in curriculum review processes and networking activities. The institutions have also been enhanced through development of facilities like IT incubation center. However, there is much more that could be done to fully enhance their role through facility development and provision of green business inputs to support green business education.

Based on the findings, to a greater extent, youth and women have received green business education and find (self) employment. Women appear to be more satisfied with the green businesses project as opposed to youth who are more inclined to formal employment in green businesses.

To a greater extent, the public is aware and appreciates green business skills available in vocational training. This is based on the opinion that the training has been able to transform the day to day livelihood needs of youth and women in the community through income generating activities such as poultry farming, dairy farming, tissue culture banana, bee keeping as well as Africa leafy farming.

While there are certain training needs among partner organizations (Zizi and ADS) such as training in fundraising, financial administration and data analysis, to a greater extent, their capabilities and capacities have been enhanced and professionalized. Thus, these organizations can fully implement green business project activities.

4.2 Recommendations

The recommendations of the study are presented based on the project outputs-based-findings as guided by project indicators.

The Role of TVET Institutions in Green Skill Development Enhanced

Curriculum Review: While the institutions have participated in curriculum review owing to the bulky nature of green business curriculum, there is a need for more comprehensive review with CDACC.

Networking: Despite the fact that the three institutions, namely Bukura, Makueni and Latia have had fruitful networking activities, there is need for more resources allocation to enhance the networking activities and allow for a greater knowledge exchange in green businesses education.

Assessment and Certification: There is a need to enhance the role of TVET institutions in green business certification owing to delays in certificate issuance by TVET CDACC. This could be done through seeking partnerships with other institutions such as polytechnics and universities.

Youth and Women Acquire Green Education and are (Self-) Employed after Completion

Employment: Since the midline evaluation did not access concrete data that could be used to determine the employment status and income levels of green businesses graduates, there is a need to conduct a comprehensive **employability tracer study** to track the number of employed trainees and their income. The tracer study will be able to provide data on the sectors that the trainees work in and whether they derive livelihood/income from farm activities.

Startup Funds/Kits: The study found that nearly 50% of graduates have been supported with startup funds. However, some of the trainees felt that there is a need for more support to ensure the sustainability of the project. Thus, more support is required and involvement of other partners including government through the ministry of agriculture to ensure the sustainability of green business.

Mentorship: According to the study, the majority of green business trainees had gone through mentorship program and they were contributing towards supporting others in green business program. However, there is a need for a more comprehensive mentorship program for youths through industrial attachment approach. Mentors could also be provided with more support to enhance better service delivery.

Green Business Known and Appreciated by the Broad Public

According to the study, the majority of the public in the project area were aware of and appreciated green skills available in vocational training. However, a significant number were not aware. Thus, there is a need for more campaign and sensitization about green business training available in TVET institutions in order to gain wider social recognition.

Building Partner Organizations' Capabilities and Capacities

While partner organizations (Zizi and ADS) capabilities have been enhanced and professionalized, continuous/ periodic training is still required to meet certain training needs of the organizations. Such training needs include fundraising, financial administration and data analysis.



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