Strathmore

U N I V E R S I T Y

PROJECT POST IMPLEMENTATION REPORT

_____

**REVENUE MANAGEMENT & CITIZEN CENTRIC ELECTRONIC GOVERNANCE
SOLUTION FOR THE COUNTY GOVERNMENT OF BUSIA**

January 3, 2018

DISCLAIMER

This report has been prepared by Strathmore University at the request of Busia County Government in our capacity as consultants in accordance with the terms of reference and the terms and conditions contained in the Consultancy Services for Automation of Revenue Collection System Agreement between County Government of Busia (CGB) and Strathmore Research and Consultancy Center (SRCC) the contracting agent of Strathmore University.

This document is not intended to be utilized or relied upon by any persons other than County Government of Busia nor to be used for any purpose other than that articulated above. Accordingly, SRCC accepts no responsibility in any way whatsoever for the use of this report by any other persons or for any other purpose.

The information, statements, statistics and comments (together with the 'information') contained in this report have been prepared by SRCC from publicly available material and from material provided by Busia County Government officials and through the consultation process. SRCC have not sought any independent confirmation of the reliability, accuracy or completeness of this information. It should not be construed that SRCC has carried out any form of audit of the information, which has been relied upon.

The statements made in this report are given in good faith and SRCC accepts no responsibility for any errors in the information provided by County Government of Busia officials or other parties nor the effect of any such errors in our analysis, suggestions or report.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

DEFINITION OF TERMS

COUNTYPRO	The online Revenue Collection System implemented at the County Government of Busia
PoS TERMINAL	Point of Sale Terminal used for revenue collection of unstructured payments i.e. Trailer Park, Markets and Bus Park
REVENUE COLLECTOR	County Government employees tasked with the responsibility of collecting money in the county
BI	Business Intelligence Reports
SBP	Single Business Permit
CITIZEN PORTAL	The self-help system that allows citizens to apply and query county services such as single business permits application , renewal and status, property payments among others
LAIFOMS	Local Authority Integrated Financial Operations Management System
CGB	County Government of Busia
SRCC	Strathmore Research and Consultancy Centre

EXECUTIVE SUMMARY

Strathmore Research and Consultancy Center (SRCC) was awarded a contract on 17th November 2015 by the County Government of Busia to automate its revenue collection processes.

This project was carried out in five phases that included;

1. Gap Analysis,

2. System development, and modification,

3. Training,

4. Go-Live, and

5. Continuous User Support.

The SRCC project team conducted a gap analysis exercise in the seven (7) Sub-Counties of Busia County from 29th February 2016 for a period of two weeks. The exercise was meant to identify the gaps that may exist and are required to meet the county's core infrastructure and human resource needs for optimal revenue collection. This report was submitted to Busia County in March 2016 highlighting the identified Infrastructure and human capital needs for optimal system utilization.

Officially, the project onsite deployment started in April 2016 with the deployment of the POS system. The deployment started from Matayos Sub County followed by Teso North, Butula, Nambale, Funyula, Teso South and Budalangi sub-counties.

The PoS deployment was well received by users but faced initial challenges that have since been addressed. The current existing challenges to date is the lack of an Information Technology Infrastructure in terms of Computers, Printers, Power backups, and Internet connection in Busia County offices. This infrastructure is a prerequisite for the deployment of the online CountyPro system that has already been customized, tested and commissioned.

So far, SRCC has been able to automated 90% of the total revenue collection streams, other areas are yet to be automated due to the aforementioned challenges. **CGB should address all the issues pointed out in the gap analysis report and a strong enforcement mechanisms and supervision of revenue collection points be put in place for successful deployment of automated revenue collection system**. This will stamp out unnecessary bureaucracy, interminable procedures, cumbrous paperwork, and unscrupulous practices.

1 INTRODUCTION

SRCC implemented an integrated revenue collection system for Busia County. The system has been operational for close to 2 years with all modules operational.

The project officially started on 29th February 2016. The Strathmore University team undertook the project in five phases.

- Gap Analysis
- System development and modification
- Training
- Go-Live
- Continuous support

The project began by conducting a gap analysis in all the 7 sub counties in Busia County by a team from both Strathmore University and CGB project implementation team.

The gap analysis was to ascertain the gaps present that needed to be addressed by the CGB before the system was deployed. It was also important for the project implementers to interact with revenue collectors to have a better understanding of how revenue collection was previously being carried out using legacy systems and manual receipts before the system could be customized to suit Busia County needs.

1.1 PROJECT OBJECTIVES

  i.) To introduce the CountyPro system to the revenue collectors, the stakeholders, and the county government officials.
 ii.) To interact with and train the revenue collectors within the sub-counties in the efficient use of the CountyPro system while collecting data in order to make improvements.
iii.) To train citizens and create awareness of the CountyPro citizen portal where they can easily apply for the county services and make queries.
iv.) To provide a reporting tool that graphically/intuitively displays a summary of revenue collected.
 v.) To develop an effective automated revenue collection system to enhance revenue collection for Busia County.
vi.) To showcase the effectiveness of the automated county operations, workflow automation, and revenue receipting system, and to generate associated business intelligence and analytics.
vii.) To provide alternative channels/mode of payment to citizens such as mobile money, credit/debit card payment and mobile banking.
viii.) To train senior management on BI reports that will help in making informed decision

2 DISCUSSION

This system encompasses two main integrated components:

  i. Digital Receipting PoS System *(Unstructured payment processing)*

ii.   CountyPro Back End System *(Structured payments processing)*

2.1   REVENUE COLLECTION USING POS SYSTEM

PoS system is an automated system that provides a digital receipting solution. It came to replace the manual receipt books that were previously being used in the county.

Use of PoS terminals provides a flexible, transparent and efficient way of carrying out revenue collection duties. Through using the PoS terminal, revenue collectors become more accountable for the revenue amounts they have collected as reflected in the POS terminal reports assigned to a specific user.

The system is designed to have simple menus that are user-friendly ensuring users perform various transactions faster and at ease. The PoS terminal enables capturing of revenue collections for various items including but not limited to:

- Markets
- Main gate Cess
- Bus park and border trailer parks
- Business premises with employees that need food handles health certificates,
- Slaughter house
- Water meter readings

Figure *1* : POS Terminal

The POS terminal has some key features that include:-

- **Mobility** - The PoS terminal is light and comfortable to handle and carried around by the revenue collectors. It also supports online and offline PoS management and background synchronization.
- **Printer** - Instant printing of receipt once the transaction is complete.
- **Real time** - Instant online reporting to the backend system for revenue collection made.

The automated system allows for various modes of payments including cash, mobile money (Safaricom and Airtel) and mobile banking. Mobile money and mobile banking practices are encouraged so as to implement cashless transactions that way, the revenue collection process is smooth and transparent at all stages.

The POS System displays the following details in the receipt:-

- The name of the county
- The name of sub-county
- The POS terminal IMEI
- The date and time the transaction was done

- The type of service

- The payment mode

- The total payable amount

- The receipt number

- The name of revenue collector who carried out the transaction

- QR code that is used for verification purposes.

- Meter number in case of water billing

- Type of Vehicle for the case of Bus Park

Figure *2*: **Sample POS Receipt**

2.1.1 **PoS Payment Modes**

The PoS system currently accepts two mode of payments that is:-

- **Cash** - This is where users just provide money and a receipt is produced in return, this is the mode of payment that dominates payment option in CGB accounting for 98% of all payments.
- **Mobile money**- The system presently accepts payment through Mpesa and Airtel Money. Nevertheless, the system has the capability of being integrated with other mobile money platforms. Although the cashless means of payment have been encouraged in

Busia County most of the services have been paid through cash since the system was rolled out.

2.1.2 PoS offline mode

CGB being near Ugandan border the network and internet connectivity is a major challenge. Even if the PoS can work in an online mode where users' transactions are synced to the server in real time, this remains sometimes impractical due to a poor internet connection that would increase the transaction time for a single transaction.

The offline operation mode of the PoS terminal helps in solving this problem by allowing users perform their daily transactions and sync data at the end of the day before submitting their end of day reports to the office. This mode provides an efficient and faster way of serving customers, with the capability of syncing data automatically within a period of less than ten minutes when the revenue collector is not busy.

2.1.3 Enforcement Criteria for PoS receipts

The PoS system has the capability of addressing the issue of falsified/illegal receipts by having a QR code or barcode in every receipt produced by the PoS terminal. Using smartphones, which are very affordable, one can use the QR code reader and scan the code, this will provide the details for the receipts. Alternatively, the enforcement officer can key in a unique transaction id or the car registration number and feed in the verification section of the PoS. The system is able to identify if the transaction was carried out using the PoS terminal, and was a genuine.

2.1.4 CountyPro Back End System

CountyPro back end system is meant to be used by the county officers to make payments, manage various structured revenue streams in the county, generate BI and other operational reports. The following modules are enabled in the system:-

- Processing of Single Business Permits.
- Processing of General Billing Payments.
- Processing of Property Rates Payment.
- Processing of Housing and Rental Payment.
- Business Intelligence and Operational Reports.

2.1.5 Capabilities of the Developed System (CountyPro)

i. Digital receipting for market rates, market Cess, vehicle parking using PoS terminal.
ii. Handling different kinds of payments including cash, mobile money, and mobile banking payments.
iii. An online citizen self-help services portal that allows citizens to perform self-application of Single Business Permits and General billing services.
iv. Citizen's ability to track their SBP applications as they are being processed by the sub-county officers through the online Citizen portal.
v. An online portal that enables citizens to pay for county services online via mobile money, credit/debit card payments.
vi. Back-end system for processing of Single Business Permits.
vii. Back-end system for processing of Property Rates and Housing/Rental payments.
viii. Digital documents produced by the system are QR Code enabled to allow for verification of validity.
ix. Business Intelligence module that enables revenue officers to view different kinds of summary or reports of revenue collected in each sub-county.

Figure *3*: A Digitally Produced Bill from CountyPro

Figure *4*: A Digitally Produced Receipt from CountyPro

SINGLE BUSINESS PERMIT

2018

Permit No: 2018/196879

County Government of Busia
MATAYOS SUB COUNTY
GRANTS THIS
SINGLE BUSINESS PERMIT
TO

Business ID No.	Business Name	
5101	MARIDADI GARDENERS	
Certificate of Registration No./ID No.:	Pin No.:	VAT No.:
BN-9PCKK5K		

To engage in the activity/business/profession or occupation of:

Business Activity Code & Description:	Detailed Activity Description:
304:Professional Services Firm With 1 - 20 Employees & Or Area Up To 100sq.M	LANDSCAPING & FLOWER NURSARY

Having Paid a Single Business Permit Fee of:

(Ksh.)
10,000.00

Ksh. (In Words): **Ten Thousand Only**

Business under this Permit shall exclusively be conducted at the address as indicated below:

P. O. Box:	Postal Code:	Postal Town:	Physical Address:	Plot No
949	50400	BUSIA	GREEN GARDEN AREA SUB COUNTY: MATAYOS WARD: BURUMBA	0
Telephone No. 1:	Telephone No. 2:	Fax:	Email:	
0711594141				

Validity Period:

Date of Issue:	Date of Expiry:
02-01-2018	31-12-2018

Name of the Officer Issuing this Permit:

Richard Ommumbwa

Licensing Officer	Signature and Stamp

County Government of Busia - MATAYOS SUB COUNTY

NOTICE: Please note that issuance of this license/permit does not exempt the holder from compliance with other COUNTY GOVERNMENT OF BUSIA Legislations and any other written Law.

Figure 5: A digitally produced Business Permit from CountyPro

3 SYSTEM REPORTS

In order to make it easier for officers to analyze the revenue they have collected, the system was designed to generate various reports. They vary for each user as there are set privileges for the type of file that is to be viewed e.g. the billing officer cannot view the cashier receipt analysis report, the cashier cannot view the departmental reports, etc.

In Busia County, CountyPro back end system went live after training was done. All officers who were trained had an account created, and are able to login with their specific credentials provided they have Internet connection and terminals. Top management, as well as officers with the privileges of accessing and managing collections using the system, have access rights to be able to view PoS collectors' reports as they are being generated from the field.

3.1 POINT OF SALE (POS) REPORTS

3.1.1 Collector Analysis Report

This report may be generated for each Sub County or the County as a whole, and it displays various Revenue Collectors activities based on payments made via cash, cheque, direct banking or online and calculates the total amount received on a range of dates selected.

COUNTY GOVERNMENT OF BUSIA
COLLECTOR ANALYSIS SUMMARY - MATAYOS SUB COUNTY
Report Period From: 01-Dec-2017 To 03-Jan-2018

Print Date: 1/3/2018 11:50:17 AM   FY- 2018/2019

Collector	Cash	Cheque	Online	Direct Bank	M.Payment	Total	Receipt
01-Dec-2017							
Alfred, Juma	2,200	0	0	0		2,200	5
Annalice, Were	43,070	0	0	0		43,070	128
CAROLYNE, AKOCHI	2,620	0	0	0		2,620	59
Deogracious, Omukaga	1,600	0	0	0		1,600	8
Dominic, Opondo	500	0	0	0		500	1
Elizabeth, Aleke	13,000	0	0	0		13,000	30
ERNEO, OTIBINI	5,000	0	0	0		5,000	16
Eunice, Magero	3,400	0	0	0		3,400	8
Everlyne, Auma	1,140	0	0	0		1,140	38
Florence, Akotch	660	0	0	0		660	29
Grace, Abiero	7,700	0	0	0		7,700	19
Lilian, Adhiambo	21,190	0	0	0		21,190	233
Martine, Onyango	2,100	0	0	0		2,100	81
MAURICE, KANGU	1,480	0	0	0		1,480	74
Mildred, Mayiah	1,540	0	0	0		1,540	64
milton, maloba	1,520	0	0	0		1,520	53
Rael, Kadogo	1,040	0	0	0		1,040	52
Sarah, Ikemer	1,500	0	0	0		1,500	3
Valnetine, Otianga	1,870	0	0	0		1,870	80
Total For Collector :	113,130	0	0	0		113,130	981
01-Jan-2018							
Alfred, Juma	400	0	0	0		400	1
Annalice, Were	1,900	0	0	0		1,900	7
Dominic, Opondo	500	0	0	0		500	1
Elizabeth, Aleke	800	0	0	0		800	2
ERNEO, OTIBINI	29,170	0	0	0		29,170	83
Grace, Abiero	3,300	0	0	0		3,300	8
Margarate, Nyongesa	1,000	0	0	0		1,000	5
Martine, Onyango	880	0	0	0		880	26
Mildred, Mayiah	200	0	0	0		200	1
Petronila, Wesonga	7,260	0	0	0		7,260	68
Valnetine, Otianga	260	0	0	0		260	4
Total For Collector :	45,670	0	0	0		45,670	206
02-Dec-2017							
Alfred, Juma	3,000	0	0	0		3,000	7
Annalice, Were	3,600	0	0	0		3,600	11
CAROLYNE, AKOCHI	340	0	0	0		340	17
Dominic, Opondo	1,200	0	0	0		1,200	3
Eliud, Adongo	340	0	0	0		340	17
Elizabeth, Aleke	2,700	0	0	0		2,700	6
ERNEO, OTIBINI	36,650	0	0	0		36,650	111
Eunice, Magero	3,500	0	0	0		3,500	7
Florence, Akotch	680	0	0	0		680	33
Grace, Abiero	15,500	0	0	0		15,500	38
Lilian, Adhiambo	1,800	0	0	0		1,800	6
Martine, Onyango	1,740	0	0	0		1,740	72
Mildred, Mayiah	2,160	0	0	0		2,160	60
Petronila, Wesonga	21,630	0	0	0		21,630	217
Rael, Kadogo	860	0	0	0		860	42
Valnetine, Otianga	2,280	0	0	0		2,280	105

Page 1 of 11

Figure 6: Collector Analysis Report

3.1.2 **Collector Detailed Analysis Report**

This report may be generated for each Sub County or the County as a whole and is generated based on a range of dates or a specific day selected. It displays detailed information on total receipts the Revenue Collectors issued per transaction.

COUNTY GOVERNMENT OF BUSIA
POS COLLECTOR REPORTS
Report Period From: 01-Dec-2017 To 03-Jan-2018

Print Date: 1/3/2018 12:03:37 PM

Transaction No/ Vehicle.Reg.No	Revenue Item	Revenue Code	Total Amount
5479100			50
5479101			50
5479102			50
5479103			50
5479104			50
5479105			50
5479106			50
5479107			50
5479116			50
5479117			50
5479118			50
5479119			50
5479120			50
5479121			50
5479122			50
5479123			50
5479124			50
5479125			50
5479126			50
5479127			50
5479128			50
5479129			20
5479130			20
5479131			20
5479132			20
5479133			20
5479134			20
5479135			20
5479136			20
5479137			20
5479138			20
5479139			20
5479140			20
5479141			20
5479142			20
5479143			20
5479144			50
5479145			80

Page 1 of 2006

Figure 7: Collector Detailed Report

3.1.3 **Collector Canceled Receipts Report**

This report may be generated for each Sub County or the County as a whole. It is generated based on a range of dates and collector selected. It gives a detailed description of total receipts canceled including reasons for the cancellation.

COUNTY GOVERNMENT OF BUSIA
CANCELLED COLLECTORS/POS RECEIPTS
Report Period From: 01-Dec-2017 To: 03-Jan-2018

Print Date: 1/3/2018 11:52:41 AM

Receipt No.	Received By	Date Received	Receipt Total	Cancelled By	Remarks
2010066	saverio, musungu	10-Dec-2017	5,000	Richard Ommumbwa	wrongly receipted
Bills for the Receipt :					
2023573	Elizabeth, Aleke	13-Dec-2017	5,000	Richard Ommumbwa	wrongly receipted
Bills for the Receipt :					
		Grand Total:	10,000		

Figure *8*: **Collector Cancelled Report**

3.1.4 Cashier/Collector Analysis Report

This report shows total collections and percentage collection by each collector during a particular period. This is a mode of revenue analysis that is meant to be used by the county top-level management to assist them in making various decisions to improve collections from various revenue streams.

REVENUE ANALYSIS BY (SUB COUNTY)
Report Period From: 25-Apr-2016 To: 03-Jan-2018 (Aggregate)

Print Date: 1/3/2018 11:51:18 AM

Sub County	Total Amount
TESO NORTH	133,433,969
MATAYOS	83,961,308
BUTULA	22,121,800
NAMBALE	17,645,209
BUDALANGI	5,807,693
FUNYULA	5,465,668
TESO SOUTH	2,550,331
Grand Total:	270,985,978
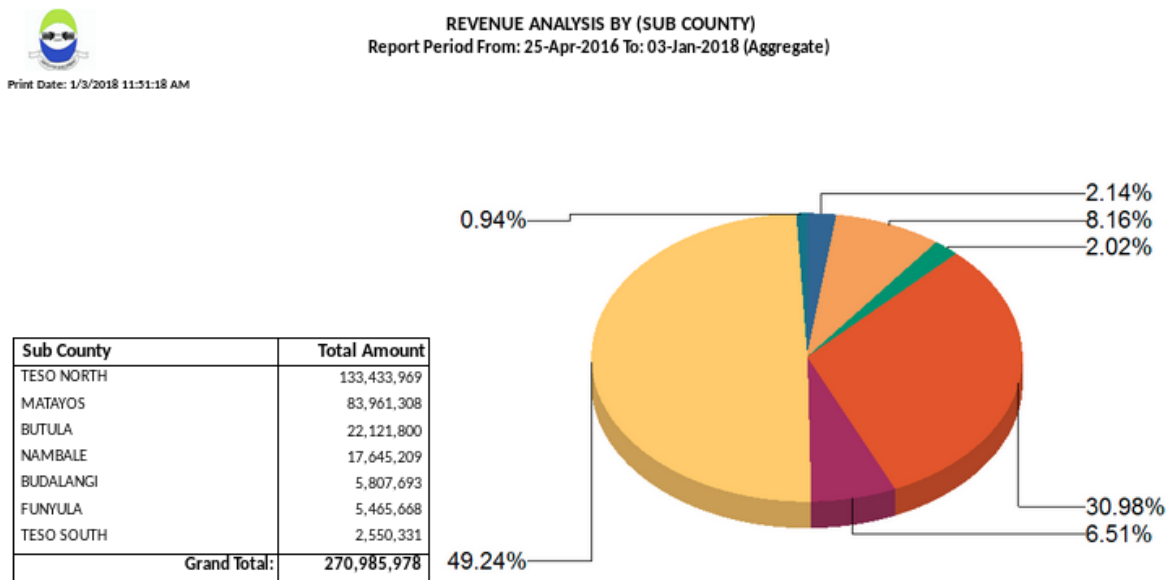
Figure *9*: **Business Intelligence Revenue Collection Analysis by Cashier/Collector**

4   PROJECT TEAM

4.1 SRCC CONSORTIUM TEAM

Name	Title	Email
Dr. Joseph Sevilla	Project Director	jsevilla@strathmore.edu
Jim Maloba	County Development Manager	jmaloba@strathmore.edu
Rohit Reddy	Lead Project Consultant	rohitreddy@yahoo.com
Nelson Mutua	Project Coordinator	nmutua@strathmore.edu
Kipyegon Kennedy	Project Officer	gkipyegon@strathmore.edu
Mary Muya	Project Officer	mmuya@strathmore.edu
Imelda Mueni	Project Manager - PoS	imueni@strathmore.edu
Gerald Ogola	Lead Developer -PoS	gogola@strathmore.edu
Kevin Omyonga	Developer - PoS	komyonga@strathmore.edu

4.2 SRCC CONSORTIUM TEAM ROLES

i.   Providing CountyPro Solution and PoS terminals
ii.   Brief introduction of CountyPro system and PoS terminals to the County assembly and the project implementation team.
iii. Training the county officers on how to:-
   •   Access the CountyPro system online.

   •   Login using their credentials.

   •   Create SBP applications, query and start SBP approval process.

   •   Create and query General Billing item(s).

   •   Process a bill i.e. makes the payment for a single bill using the various modes of payments (Cash, direct banking, and cheque).

   •   Make payments for multiple transactions for one customer in various scenarios i.e.

      o   A customer with multiple bills and they need one receipt.

      o   A customer with multiple bills and need to make payment using one cheque/ direct banking slip.
   •   View actual paid bills/unpaid bills, pending SBP, cashier analysis summary, receipt analysis summary reports.
   •   Query receipts to get a copy receipt.

   •   Process property rates payment and carry out adjustments of property rates.

   •   Process county housing/rental payments.

      o   Access and use of the Citizen portal.

      o   Point of Sale Terminal Training.

      o   Continuous user support and maintenance of the system.

4.3 BUSIA COUNTY PROJECT TEAM

4.3.1 Project Implementation Lead Team

	Title	Email
Anthony Opondo	County Revenue Director	opondoantony@yahoo.com
Charles Andima	Assistant County Revenue Director	charles.andima@yahoo.com
Hudson Ogubi	Chief ICT Officer	hudsonogubi@yahoo.com
Catherine Akware	Chief ICT Director	cakware@yahoo.com

4.3.2 Busia County Project Team Roles

i. Attending implementation meetings and giving feedback on how the system should be designed.
ii. Providing data to be used in the CountyPro system.
iii. Availing necessary tools e.g. the internet, computer, and printers for the users to be able to easily use the newly adopted system.
iv. Organizing system review meetings to give feedback on how the CountyPro system is working.
v. Planning training and ensuring users are available for the sessions.
vi. Ensuring that revenue officers and collectors are adequately trained to be able to use the newly implemented systems.
vii. Continuous support to project implementers to be able to offer support to users of the system.
viii. Providing support to users of the system in various tasks.

4.4 THE COUNTY REVENUE AUTOMATION IMPLEMENTATION COMMITTEE

The following County Officers were appointed to be members of the revenue implementation committee.
This committee was established to spearhead the development and implementation of County Revenue Automation and Management process. The committee reports directly to the Chief Officer – Finance & Economic Planning on regular basis.

No.	NAME	DEPARTMENT	TITLE
1.	**Antony Opondo**	Finance & Economic Plan.	Head of County Revenue Collection
2.	**Hudson Ogubi**	ICT	Head of ICT
3.	**Carolyne Oduori**	Office of the Governor	Sub-county Administrator
4	**Joseph Olubero**	Water, Environ. & Nat. Res.	County Director of Water
5.	**Chrisantus Okware**	Office of the Governor	Sub-county Administrator
6.	**Daniel Okana**	Office of the Governor	Sub-county Administrator
7.	**Michael Aderi**	ICT	IT Administrator
8.	**David Sibeyo**	Office of the Governor	Sub-county Administrator

9.	**Tobias Wanzala**	Office of the Governor	Sub-county Administrator
10.	**Vincent Asikoye**	Trade, Cooperatives & Ind.	County Director of Trade
11.	**Boniface Amwayi**	Land Housing & Urban Dev	County Director of Housing
12.	**Wintress Anyango**	Finance & Economic Plan.	Revenue Mon. & Perf. Eval. Unit
13.	**Charles Andima**	Finance & Economic Plan.	Chief Revenue Officer
14.	**Hudson Mugendi**	Agribusiness Devpt. Officer	Agriculture & Animal Resources
15.	**Ambrose Fwamba**	Health / Public Health	County Public Health Officer

5. PROJECT IMPLEMENTATION

5.1 END USER TRAINING

Specialized training was offered to the revenue users who interact with the CountyPro system on a daily basis. The SRCC Project team was able to reach out and train officers from four out of the seven sub-counties in Busia County on the use of CountyPro back end system due to limited IT infrastructure at the county. Each officer was trained in accordance with their role and their level of access to the system.

The Strathmore Project team also trained revenue collectors in all seven sub-counties of Busia County on the use of PoS system. The collectors were trained in all the functionalities of the PoS system. Prior to the Project Implementation, The Busia project implementation team underwent intensive one-week administrator training at Strathmore University.

Staff training was carried out in all the seven sub counties with officers being trained depending of the revenue sources they deal with and the relevant modules they were to use in the system. These sub counties are:-

1. Matayos

2. Nambale

3. Butula

4. Funyula

5. Budalangi

6. Teso North

7. Teso South

The following are the modules used for structure payments:-

No	Module	Description
1.	**Admin**	This is the module that all functionality that can be carried out by user with administrator rights. These includes; 1. Amend receipt

No	Module	Description
		2. Create approval cycle
		3. Portal user signup
		4. User Management
		5. Workflow Management
2.	**Business Intelligence**	This module encompasses various management reports;
		1. Revenue Analysis By Sub county
		2. Revenue Analysis By Revenue type
		3. Revenue Analysis By Collector/Cashier
		4. Revenue Analysis By Pay mode
		5. Revenue Analysis By Drill Down Date Wise
		6. Revenue Analysis By Drill Down Revenue
		7. Revenue Analysis By Top Performers
8.	**Business Permit Module**	This module encompasses;
		1. Registration of New Single Business Permits
		2. Renewal of existing Single Business Permits
		3. Late payment penalty for all renewals
9.	**General Billing Module**	This module encompasses;
		1. Creation of bills that consist of;
		• Advertisements
		• Building Plan and Approval related fees
		• Change of user and Change of ownership fees
		• Amalgamation Fees
		• Liquor License Application Fees
		• Clearance Certificate Fees
		• Liquor License Application Fees
		• Stadium hire
		• Hall hire
		Among others
10.	**House Rental Module**	This module encompasses;
		1. Transfer of Houses including Transfer fees
		2. Payment of existing Housing rentals and Market Stalls
		3. House rent adjustments
11.	**Property Rates**	This module encompasses;

No	Module	Description
	Module	1. Registration of Properties that include Application fees
		2. Transfer of Properties that include Transfer fees
		3. Payment of existing Land Rates, Ground Rent and penalties on registered properties
		4. Land Rates Penalties
		5. Property sub-division with sub-division fees
		6. Property adjustments
		7. Property Waiver
12.	**Report Module**	This module has a number of reports that include; 1. Admin reports • User Activity log • Active user Register 2. Banking collection reports • Banking list • Direct banking receipts • Incoming cheque register 3. Billing reports • Actual paid/unpaid bills • Waiver bills 4. Cashier reports • Cashier Analysis Summary • Cashier Receipt analysis • Cancelled cashier receipts • Cashier Detailed Analysis • Customer detailed analysis 5. Collector reports • Collector Analysis • Collector Receipt analysis • Collector detailed analysis • Cancelled collector receipt • Collector summary report 6. Property reports • Property adjustment

No	Module	Description
		• Property Outstanding
		• Property payment
		• Property Register
		• Property Statement report
		• Property update report
		• Disabled property report
		• Property transfer report
		• Property bill expired
		7. Revenue reports
		• Cost centre
		• Daily Revenue Abstract
		• Item wise aggregate
		• Monthly Department
		• Monthly detail\Monthly section
		• Monthly unit
		• Quarterly analysis
		• Receiprt revenue type
		• Revenue fee type
		• Item wise collection
		Some of the revenue reports are yet to be mapped due to lack of IFMIS Codes
		8. SBP Reports
		• Application status summary
		• Business case wise summary
		• Business Register
		• Pending SBP Application
		• SBP Payment Analysis
		• Task status summary
		• SBP renewal status
		• Expired SBP Status
		• SBP Code detail
		9. House/stall reports
		• House/Stall Statement log

No	Module	Description
		- House/Stall adjustment - Estate wise collection - House/Stall Outstanding

Table 1 : Modes of structured Payments

5.2 PROJECT PROGRESS PRESENTATION TO BUSIA COUNTY CABINET

Strathmore project team did a presentation on the progress of the automation project to the County Government of Busia County Executive Committee (CEC) on 1st August 2016. The Governor of the CGB, His Excellency Hon. Sospeter Ojaamong was present in the meeting.

The CEC team was taken through the project objectives, the overall overview of the CountyPro system, the revenue analysis, and performance during the first phase of the project implementation. The challenges faced during the project recommendations and the expected benefits after the full project implementation were highlighted during the presentation.

This presentation enabled the County CEC team to be updated on the project progress, the challenges, and project recommendations for their deliberation and action.

5.3 COUNTYPRO SYSTEM PILOT

A pilot exercise on the use of CountyPro system was carried out in the month of July 2016 in Matayos Sub County. The pilot was carried out in the following sections.

i. The revenue office, where billing, Single Business Permits and receipting for various revenue operations is done
ii. The property rates offices, which deals with the property rates and house rental operations.

The SRCC project team provided four Safaricom modems loaded with data bundles that were used by the users to access the web-based Countypro system.

Refresher training was done to the users, later they did parallel transactions on the CountyPro system.

The following were the major pilot aims:

i.   To enable the users to grasp the system well and feel comfortable before the system go live.
ii. To point out any system issues in order to correct and align as required at an early stage before the system go live.
iii. To enable the County Government of Busia to acquire the needed infrastructure during that period.

5.4 PROPERTY RATES MODULE GO LIVE

The SRCC Project team did a refresher course to the users in Matayos Sub County on the Property rates module. The users did parallel transactions for a period of two weeks before it went live on 1st August 2016.

The ICT Director, Mr. Hudson Ogubi assisted in the creation and configuration of a subdomain to be used in the servers that host the Busia CountyPro backend system.

5.5 USER SUPPORT

Since system Go live, the SRCC technical support team and Busia County ICT Team have been offering continued support to system end-users. Busia County should deploy ICT Officers to the sub-counties to offer IT administration support services to end users.

The table below gives a schedule of major activities that have taken place to date since going live;

	Date	Activity	Was Report for the Activity Presented
1.	28th Feb- 31st July 2016	Training and deployment of CountyPro System for CGB	Yes
2.	3rd-10th Sept 2016	System maintenance	No
3.	10th Nov 2016	Post Implementation Report	Yes
4.	5th -10th Dec 2016	Project Progress Assessment visit	No
5.	8th -29th Jan 2017	Training and Go live of PoS Module in two Sub-counties Refresher training and Go live of Backend modules in all the seven sub-counties	No
6.	19th-25th March 2017	Quarterly Site Visit and Support	No
7.	29th Jun 2017	Project Status Report	Yes
8.	11th to 16th Sept 2017	County Revenue Enhancement Strategy Review Workshop	No
9.	23rd Sept - 7th Oct 2017	System Maintenance visit	No
10.	3rd -16th Dec 2017	Training of water billing and liquor licensing module	No

Table 2 : Activities during SRCC team visits to Busia

5.6 MOBILE PHONE BASED PoS

A pilot of the Mobile phone based PoS was done by the SRCC team on September 2016 in Busia County. The pilot majorly targeted the busy revenue points of Busia County, which are mainly the Trailer Parks and Bus Parks.

SRCC project team deployed 15 Mobile Phone PoS in these busy areas. Some of the advantages of the Mobile phone-based PoS in comparison with the inbuilt printer PoS gadgets are:

i.   Faster transaction speeds.

ii.   The PoS application automatically synchronizes all transactions when the user prints an end-of-day report.

iii. Clients can make payment using Mpesa and the transaction code gets auto-filled in the user device.

iv. An alternative of receiving an SMS confirmation after payment instead of printing a receipt is available.

v. It is light in weight, portable and convenient when being carried around by the users.

vi. Easy to service and replace when the need arises.

5.7 PENDING PROJECT TASKS AND UNUSED MODULES

Project Tasks Pending from Busia County side		
Issue	**Description**	**Recommendation**
Provisioning of LAN internet in Busia revenue offices	System users in Busia are using modems to access the system. Use of modems has known limitations such as low bandwidth resulting in slow internet connections. Also the modems suffer from network fluctuations and therefore not reliable	• SRCC to follow with Busia ICT department on when the process should be completed
Installation and setup of Standard server room (data center)	A standard server room/Data center was supposed to be set up at Matayos Sub County by County Government of Busia to act as a backup to the Cloud based servers currently hosting CountyPro system	• Busia ICT team to fast track the process
IFMIS Codes	For effective reports all items in the finance act need to be mapped as per the IFMS codes, approximately 50% of the items have been mapped but the process have been halted due to absence of IFMS reporting template	• Busia County Officials to provide IFMIS reporting template for mapping to be complete

Project Tasks Pending from Busia County side		
Issue	**Description**	**Recommendation**
Automation of other hospitals' activities.	Apart from the referral hospital, all other hospitals and agriculture department revenue collections are done manually.	• The process of integrating the HMIS system in Busia referral hospital with the CountyPro system is done. • SRCC team proposed all the other sub-county hospitals to be automated using the HMIS used at Busia referral hospital which has been integrated with County Pro system.
Automation of Agriculture department	The agriculture department charges are already set up in the CountyPro system however, the department offices does not have the necessary IT infrastructure needed to access and use the system such as Computers, Printers and Internet. SRCC team communicated these challenges to Busia County Officials. This was also captured in the gap analysis report which was written and submitted by SRCC team.	• County Government is in consultation with World Bank to provide required infrastructure to enable the full automation revenue collection processes.
Addition of Inspection fees During SBP Application	The public health department was to agree if these fees should be included and provide feedback to SRCC team.	• It is recommended that the public health department provides feedback before January 2018 on whether the fees

19

Project Tasks Pending from Busia County side		
Issue	**Description**	**Recommendation**
		should be included or not.
Level 1 support	System users are usually stuck on challenges mostly involving hardware and network.	• The SRCC to follow up if the County deployed ICT officers in all the sub-counties
Unused Module		
Self Help Group Module	SRCC team trained officers on this module, the module encompasses creation of bills that consist; Self Help group registration fee for different categories. The module has not been utilized since deployment	• We request the county to ensure all registered Self Help group register with the county Government

Table 3 : Pending tasks

5.8 SYSTEM IMPROVEMENT

Module	**Development Status**	**Detail Description**
Water billing application	Development is complete	• Deployment to be done after all the customers' data is acquired and required IT infrastructure put in place.
Enforcement application	Development is underway	• Training and deployment to be done after development is complete
Target setting Module	Development is underway	• Training and deployment to be done after development is complete
USSD based mobile payments	USSD payment was deployed but there has been less customer	• SRCC in consultation with the county Government to

Module	Development Status	Detail Description
	sensitization	come up with a Customer sensitization strategy

Table 4 : System improvements done by SRCC

5.9 RECURRING PROJECT PROBLEMS

Issue	Description	Action
Cases of POS devices with data not synced	A number of POS devices do have Airtel lines; these lines have not been subscribed to monthly data bundles, also a number of revenue collector fail to synchronize their data out of ignorance.	A reports listing revenue collectors who haven't synced their data on daily basis is available in the system. SRCC team added a force sync functionality that ensures revenue collectors sync their data before they generated end of day report.
Break down of POS devices	POS devices breakdown due to either adverse weather conditions or mishandling by revenue collectors	Have a functionality that capture device IMIE to monitor devices that are not In use Have maintenance contract for POS devices in place
Swollen batteries	When POS devices are charged is in use for a long time the battery start to swell, the device can only work when the battery is replaced.	Follow to see the county is purchasing batteries as they were advised by SRCC. Alternatively SRCC to request the County for a maintenance contract to replace the affected batteries.
Mobile devices that cannot allow syncing using device mobile data	Thirteen Wiko phones are used in the busy collection points. The mobile data functionality for these devices is not functioning. Revenue collector through the assistance of ICT officers are forced to connect the device to a hotspot to synchronize data. This cause the devices to	SRCC to plan on replacing the Wiko phones.

Issue	Description	Action
	have many unsynced transactions hence slowing down syncing process	

Table 5 : Recurring problems since system deployment

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSIONS

i. The system has been well received by most Collectors and officers who are comfortable with the usage, with most revenue collection team members reporting they would not want to go back to use the previous manual based system.
ii. The revenue Collectors and supervisors are impressed with the efficient delivery of county government services to citizens, and reduced dependence on human interactions for revenue sources already automated.
iii. There is increased citizen participation/empowerment through transparency and access to information for those able to access the county services via the web *citizen* portal.
iv. The system makes reconciliation of daily and weekly collections of revenue much easier for the Revenue Collectors together with their supervisors.
v. The officers are able to easily view reports of collection for various items e.g. market, parking etc. for various Revenue Collectors using the CountyPro system.
vi. The new system brought about paperless operations, with reduced cost of processing transactions/applications and delivering citizen services.
vii. The County Government should provide the right infrastructure including computers, printers and LAN internet connection to enable automation of the remaining manual operations across the county.
viii. There is need for the county to make use of the reporting capabilities provided by the system to monitor and make decision on revenue collection trends.

6.2 CHALLENGES

i. Lack of internet connection and substantial information technology infrastructure in the sub counties revenue stations and other departments. Example in Agriculture and Town Planning department.
ii. A percentage of sub counties staff especially the revenue collectors have a low level of competencies needed to be trained on the Point of Sale (PoS) terminals and CountyPro system.
iii. There is a shortcoming in the number of staff required for revenue collection in each of the sub-counties. The limited staffs are forced to move from one collection point to another within the same day, which complicates the end of day reporting and supervision.
iv. Roaming of mobile connection near Busia and Malaba border point thus, affecting GSM network accessibility on the PoS devices. This was solved by the PoS offline capability except when the users are logging in which can pose a challenge and also when syncing transactions.
v. There is a great number of faulty PoS terminals due to PoS exposure to extreme weather conditions and mishandling by the users.
vi. Human errors in capturing PoS transactions leading to a lot of voided receipts and wasted printing receipt paper is becoming a concern hence continued user training and sensitization on the need to properly maintain the issued devices is needed.

vii. A power outage is a common scenario in Busia County and lack of power backups affects the users as they cannot charge the PoS terminals or access the CountyPro system during power outages.

viii. During deployment the county government had not laid down the right infrastructure that can support use of CountyPro system, this included hardware e.g. computers and printers and also internet connectivity. This delayed deployment process. It has also caused a hold on the automation process of some department operations.

ix. Due to lack of power at revenue collection points, most users take their PoS terminals to charge at home and those who do not have power at their homesteads are forced to charge in business premises like shops which pose a risk to the PoS terminals.

x. Some collectors were printing and issuing end of day report as receipts. The number of end of day reports that one can generate have now been limited to two per user.

xi. During the start of PoS Go live in Matayos and Teso North Sub Counties, human errors such as wrong selection of charged items and printing half receipts due to completion of printing roll lead to quite a number of voided erroneous receipts. These errors also at some scenarios caused a difference of the collections at hand and the end of day report.

xii. Logistical challenges in water department. These are lack of transport facilities such as vehicles and motorbikes. Some are broken down and need to be repaired. In the case where they are available, there is lack of fuel.

xiii. Operation and Management challenges in water department such as lack of spare pipes, fittings, chemicals, handling equipment's, protective gears, meters, well equipped labs, and stationery. Availability of these facilities will ensure smooth operations of the system e.g. stationery is needed for printing bills and receipts.

xiv. Social problems in water department such as lack of sanitary facilities, security and housing. Lack of sanitary facilities poses health threats. Security is paramount to safeguard the IT infrastructure such as Computers and Printers needed to run the system. The staff require housing near the water stations to enable to attend the customers' needs anytime i.e. late in the night. Some of the water stations do not have offices where they can put the IT infrastructure and operate the system e.g. Busia hills in Budalangi. Some of the other stations have Offices which needs renovation e.g. Port Victoria in Budalangi. This is because the state of the Office such as broken windows poses security threat to the IT infrastructure needed to operate the system.

xv. Other challenges in water department are lack IT infrastructure such as Computers and Printers, lack of Internet connection, lack of enough employees to enable segregation of duties, lack of access roads for example in Onana and Port Victoria water supplies, lack of paying electricity bills which result in power cut off. During power cut off, the water stations are unable to pump water from the pump stations e.g. a case of Munana water station in Funyula where there was a power cut off for two months due to unpaid electricity bills.

xvi. Towards mid-September 2016 and the end of September 2016, some cases of the end of day report mismatch was reported. The SRCC project team traveled to Busia and the following were the findings they found:

   a) **User Related Issues:** There were human errors in which some were intentional manipulation by a few Revenue collectors and some of the ICT officers.

      ✓ The SRCC team observed an input error that when the users wanted to print 20 Market service items, instead of selecting the Market 20 Item 20 times they ended up selecting it 18 times, with a result of Ksh. 360 then an error of selecting Market 30 once, leading to a wrong total of Ksh. 390 thus getting wrong totals. The SRCC team managed to point out these issues and resolved them.

PROJECT POST IMPLEMENTATION REPORT

✓ Initially, with the receipt of the County Finance Act, there were charges that were recorded as N/A (Not Applicable). These records were inserted as is due to the critical elements of the finance act and that they had to be included as is. The collectors via the help of some of the ICT officers appointed made a manipulation to print the transactional receipts of these charges as a means of falsely charging the clients. This meant that the reports read of receipts printed but with the value of the receipts being transacted to record zero amount as the charge. The major sub counties that had these issues were Nambale, Butula and Funyula respectively.

❖ Below is a broad breakdown of the collectors who carried out these transactions:

- *Fredrick Muruka -224 receipts printed*

- *Janet Etyang - 81 receipts printed*

- *Fredrick Oloo Onyango- 37 receipts printed*

❖ It's important to note that these were not the only collectors who carried out these transactions. However these were the individuals with the highest transactions, and notably, it started from Fredrick Oloo.

❖ This made it hard for them to keep track of the transactions that they had carried out thus having a mismatch between the actual money at hand and the actual number of receipts.

❖ This issue was well confirmed by Mr. Andima, the Deputy Revenue Director who met the SRCC team to discuss the issue.

❖ It was agreed that those services with N/A charges be deleted from the CountyPro system. This was done and the items do not reflect in the system anymore.

b) PoS Related Issues:

✓ Some devices had hardware issues, one, for example, had an issue with the number 3 key which was not working. While another device could not connect to the internet via the sim card or mobile data, or if you try to connect to the internet the device's screen goes to a blank screen making it unusable, forcing a restart. These devices were replaced and the defective devices were taken back by the SRCC support team for repair.

✓ Some devices were not recording all the transactions. This scenario mostly affected the busy areas where traffic was high. The SRCC development team visited the affected areas where they accessed the issue. After finding out the problem, they rectified the issue and monitored the situation for two weeks.

6.3 RECOMMENDATIONS

i. The CGB should procure the required information technology infrastructure i.e. Computers and Printers in all sub-counties as pointed out in the gap analysis report. This process should be fast-tracked to enable the deployment of the remaining CountyPro system modules. It will not be possible to undertake the exercise until these required infrastructures is provided.

ii. The CGB should fast track the provisioning of reliable internet connection in all the sub counties as pointed out in the gap analysis report to facilitate access to CountyPro

system by the users. The system is web based and because the CGB has no data center that can host the server, internet is required to access the CountyPro.

iii. The CGB is strongly advised to provide enforcement directorate with enforcement powers needed to curb the revenue officers and the ICT officers intentionally manipulating the system. The officers found with these unscrupulous practices should face disciplinary action. The revenue officers should also be encouraged to minimize human errors and be careful when handling PoS terminals to reduce faulty devices and wrong transactions.

iv. Continuous user sensitization and training programs should be encouraged in conjunction with recruitment of additional field revenue collectors with basic ICT literacy skills for improved efficient operations and enhanced skill transfer.

v. There is a need to recruit the additional workforce as pointed out in the gap analysis report to meet the shortage of personnel needed for the approval process of Single Business Permits. An example of these Officers is the Billing Officers, Public health Officers, Fire safety officers and Education Officers. Permanent staff should also be employed to solve the challenges with casuals. The recruitment process should follow a well laid down procedure to ensure the incoming staff has the right qualifications and competencies that suit the respective position.

vi. The CGB should conduct awareness on the use of the new finance act charges and provide strong enforcement of these charges.

vii. The County Government is advised to provide power in revenue collection points and increase charging points for the PoS terminals to avoid officers carrying PoS terminals to their homes or charging in business premises.

viii. Civic education should be conducted to alert the citizens about the new system and how they should use it to pay for county services. The benefits of the new changes should also be highlighted so that they are appreciated by the users.

ix. Towards the realization of increasing revenue collection and providing a centralized revenue collection point, the users will be billed from one central point in the County revenue office. The bill for Single Business Permit will accumulate other services such as solid waste fees, fire safety charges, and public health charges. Therefore, the County Government of Busia should ensure these services are being provided to the citizens and sensitization done to them to avoid resistance.

x. We strongly urge the county to **embrace Cashless Payments**, especially in high revenue potential areas. The primary target being PSV's, Boda Boda's, Taxi's and Trucks. These motorized entities should be issued with prepaid county co-branded debit cards. The cards will contain the citizen and the vehicle registration details. This minimizes transaction time and data input errors that are a current core concern. The citizens will be able to swipe, touch and go or insert the card into the PoS terminal with a physical receipt being printed. An SMS alerts will follow to confirm crediting of funds from the card following standard banking procedures.

xi. We also strongly recommend the **introduction of seasonal tickets/licenses** especially in the PSV category to ensure increased compliance and application of enhanced enforcement and monitoring strategies for improved revenue collection in this target revenue stream.

xii. In order to realize successful deployment of water billing module, the CGB should provide solutions to the existing challenges. These includes:
   a. **IT infrastructure** i.e. internet connections, computers and printers in the sub counties administrators' offices.
   b. **Logistical Challenges** should be addressed i.e. Transportation facilities such as fuel, vehicles and motorbikes should be provided.

c. **Operation and management challenges** should be solved by providing the required equipment's such as pipes, fittings, chemicals, protective gears, meters, stationery and well equipped labs.
d. **Social facilities** such as sanitary facilities, security, housing and proper secure offices should be put in place.
e. **Human resource** should be provided to enable segregation of duties. Ensure payment of Electricity bills on time to avoid lack of supply of water from the pumping stations due to power cut offs.

SRCC CONSORTIUM PROFILE

SRCC Limited is the consulting arm of Strathmore University @iLabAfrica Research Centre, which also houses the Safaricom Academy. @iLabAfrica is a Centre of Excellence in ICT Innovation and Development set up in January 2011. It is an independent entity in the Faculty of Information Technology at Strathmore University. It was established to address the Millennium Development Goals (MDGs), the new 2030 Sustainable Development Goals (SDGs) and to contribute toward Kenya's Vision 2030.

Strathmore University is a leading University in the region, whose mission is to provide all-round quality education in an atmosphere of freedom and responsibility; excellence in teaching, research and scholarship; ethical and social development; and service to society.

SRCC has been in operation from 2003 and coordinates the consultancy work of the Strathmore University to ensure that clients receive high-quality advisory work under generally accepted commercial arrangements. SRCC does work in the following lines of services:

- Information Technology Consulting

- Management Consulting

- Business Process Outsourcing

- Corporate Academies

- Project Management Consulting

- E-governance Consulting

- Project Monitoring & Evaluation Consulting

On assignments where the client's solution requires capabilities beyond the inventory bank of SRCC and the Strathmore University, the company teams up with credible partners and other subcontractors to deliver seamless services to the client. In the present assignment, SRCC formed a consortium with NaMu/Simplex (Specialists in Local Governance/Permits Management Solutions). SRCC is the consortium lead and assumed responsibility for the overall Project Management, User Training, Implementation, and Support.

Of the consortium partner, NaMu is the exclusive representative of Simplex Software Solutions Pvt. Ltd. in Africa, and its packaged, out-of-the-box County Government Management, and Revenue Collections Software (CountyPro). CountyPro is an award-winning solution, representing best practices in revenue management, and county operations management. The solution is ready to be deployed with minimal customization.

ACKNOWLEDGEMENT

SRCC is grateful for the opportunity afforded to implement the Revenue Management & Citizen Centric Electronic Governance Solution for the CGB. Though the implementation faced some challenges, we had support from various individuals. We would, therefore, like to extend our sincere gratitude to all of them.

We are highly indebted to the leadership of the CGB for their guidance and constant supervision as well as for providing necessary information regarding the project and for their support during the implementation phase.

The experience was enriching and we look forward to a continued fruitful cooperation especially in having the remaining modules activated once the required for infrastructure is in place as per the contract and beyond.

Yours sincerely,

Jim Maloba,
County Development Manager,

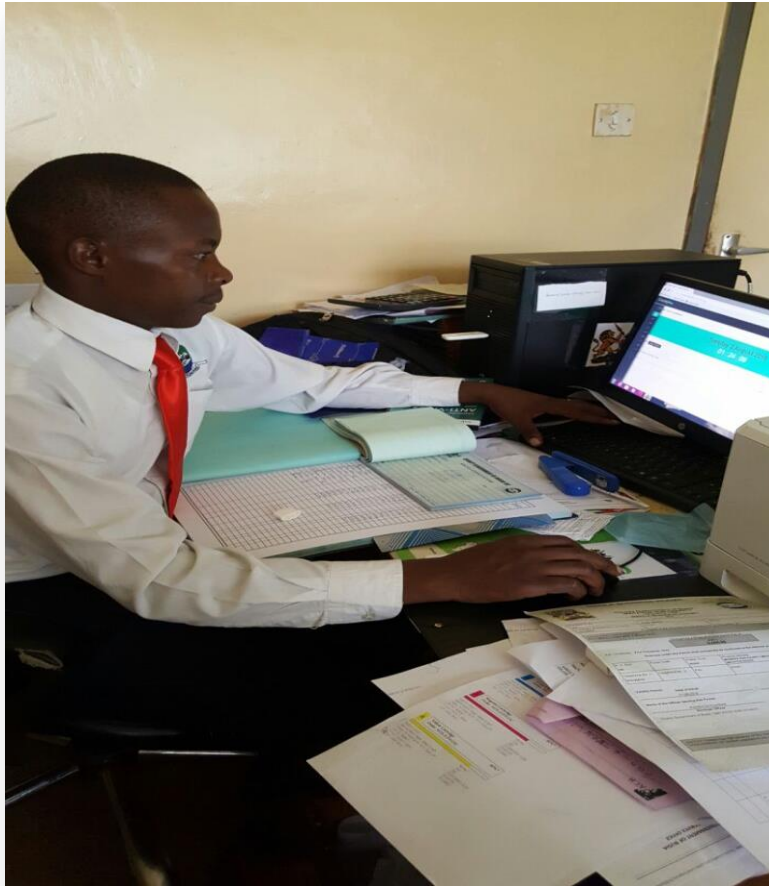## Appendix: Images of Users Using the CountyPro and PoS System

Figure D.1: **A Revenue Officer generating a Single Business Permit at Busia Revenue Office**

Figure D. 2: A Revenue Collector Using the PoS Terminal at Trailer Park and Market

APPENDIX: IMAGES OF USER TRAINING ON USING THE COUNTYPRO AND POS SYSTEM

Figure E1: Revenue Collectors training on how to use POS terminals

Figure E.2: A group photo of Busia Revenue Collectors and Strathmore University team at Busia County after the training

Figure E.3.: Strathmore University Team conducting Training to the County Project Implementation team at Strathmore University

Figure E.4: Busia County Finance Chief Officer Mr. Allan Omachar at CountyPro workshop in Strathmore University

Figure E.5: @iLabAfrica Director Dr. Joseph Sevilla awarding certificates to Busia Project implementation team at Strathmore University after successfully completing the CountyPro workshop
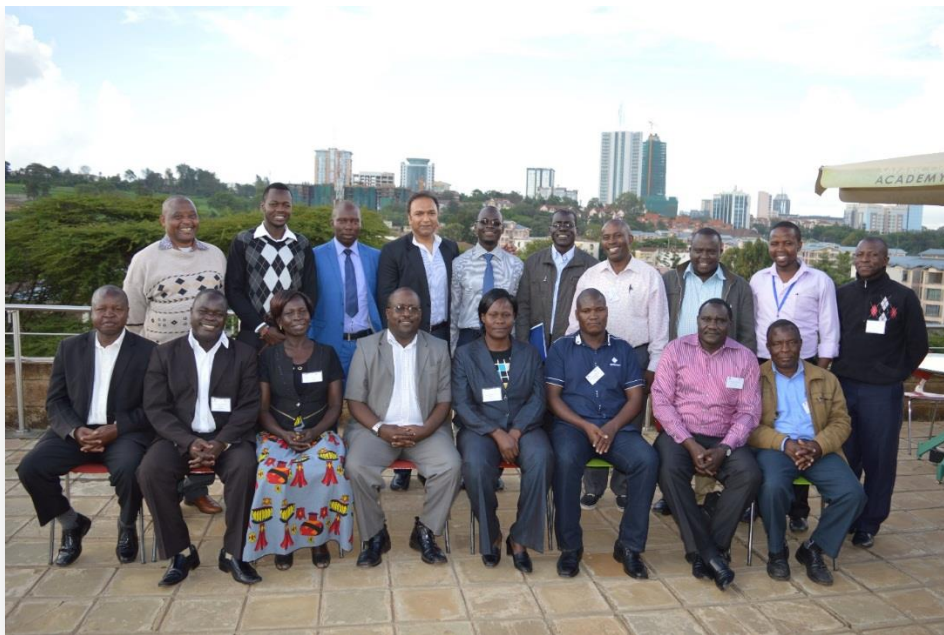

Figure E.6: A group photo of Busia County Project Implementation team and SRCC team at Strathmore University after the workshop.