COUNCIL OF GOVERNORS

A COMPENDIUM OF COUNTY INNOVATIONS AND BEST PRACTICES ON SERVICE DELIVERY

2ND EDITION

JULY 2021 – DECEMBER 2021

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Maarifa Centre
Sharing Kenya's Devolution Solutions

COMPENDIUM OF COUNTY INNOVATIONS AND BEST PRACTICES ON SERVICE DELIVERY

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Maarifa Centre

The Maarifa Centre is a knowledge sharing and learning platform established by the Council of Governors for capturing of lessons and experiences from the 47 County Governments to support its learning agenda.

Our Vision

Prosperous and democratic Counties delivering services to every Kenyan.

Our Mission

To be a global benchmark of excellence in devolution that is non-partisan; providing a supporting pillar for County Governments as a platform for consultation, information sharing, capacity building, performance management and dispute resolution.

Our Values

Our core values are professionalism, independence, equality and equity, cooperation and being visionary.

Our Motto

48 Governments, 1 Nation.

Maarifa Centre Motto

Sharing Kenya's Devolution Solutions

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ABBREVIATIONS AND ACRONYMS

ASALs	Arid and Semi-Arid Lands
AMR	Antimicrobial Resistance
AMS	Antimicrobial stewardship
App	(software) Application
AWaRe	Access, Watch and Reserve
BOM	Board of Management
CASIC	County Antimicrobial Stewardship Interagency Committee
CBC	Competency-based Curriculum
CBO	Community-based organization
CECM	County Executive Committee Member
CIDP	County Integrated Development Plan
CHVs	Community Health Volunteers
CoG	Council of Governors
COVID-19	Coronavirus disease 2019
CPSB	County Public Service Board
CQI	Continuous Quality Improvement
DFID	Department for International Development
ECDE	Early Childhood Development Education
FCDO	Foreign, Commonwealth & Development Office
FY	Financial Year
H.E.	His Excellency
HIV	Human Immunodeficiency Virus
HPTs	Health Products and Technologies
HPTU	Health Products and Technologies Unit
ICT	Information and Communications Technology
IDDS	Infectious Diseases Detection & Surveillance
IYIC	Isiolo Youth Innovation Centre
KEBS	Kenya Bureau of Standards
KLB	Kenya Literature Bureau
KM	Knowledge Management
KSh	Kenya Shillings
KSG	Kenya School of Government
MCA	Member of County Assembly
MTCs	Medicines and Therapeutics Committees
MoH	Ministry of Health
MSH	Management Sciences for Health
MTaPS	Medicines, Technologies and Pharmaceutical Systems
NOFBI	National Optic Fibre Backbone
NHIF	National Hospital Insurance Fund
OPD	Outpatient Department
PHC	Primary Healthcare
PLWDs	People Living With disabilities
PMC	Project Management Committee
POs	Programme Officers
PVCA	Participatory Vulnerability Capacity Assessment
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WR	Warehouse Receipt
WHO	World Health Organization

FOREWORD

I am delighted about this great milestone by the Maarifa Centre for putting together the second edition of the Compendium of County Innovations and Best Practices that presents a variety of unique experiences and approaches by the County Governments in service delivery. The Maarifa Centre has continually engaged with Counties to support the identification, capturing and documentation of best practices, innovations, success stories and initiatives to foster a knowledge culture at the County level.

In this second edition of the Compendium, seven (7) sectors have been highlighted across thirteen (13) Counties. I would like to congratulate the Counties whose success stories have yet again been highlighted in this booklet, but we are even more proud of the additional Counties that have been featured in this edition. This is a show of the great commitment by Counties to continually apply service delivery innovations to ensure they perform their functions with efficiency and effectiveness for optimal results.

This Compendium is a great reference point for peer to peer learning capable of triggering replication and scale-up of tested solutions. Identification, documentation and dissemination of best practices and innovations is a key priority for Maarifa Centre since accessibility of knowledge assets is the catalyst for learning at the County level.

In recognition of the important role knowledge management (KM) plays in 21st century ICT- based economies, the Council of Governors, through the Maarifa Centre, is keen to establish a vibrant database of KM champions who are able to support their respective Counties in managing knowledge for the current and future generation County Governments. We will continue to build the capacity of KM champions and work with our partners to provide technical assistance to Counties to facilitate them establish structured mechanisms for KM. This will create a strong KM culture within the Counties.

> “In the coming year, Maarifa centre will invest in expanding its partnerships in order to strengthen Communities of Practice and peer-to-peer learning engagements.....

I would like to appreciate the various partners who have collaborated with CoG Maarifa Centre in this edition. Special mention to World Bank for their unremitting technical support for the Maarifa Centre. Over the years, the Centre has continued to gain visibility as the premier repository for devolution solutions. In the coming year, Maarifa centre will invest in expanding its partnerships in order to strengthen Communities of Practice and peer-to-peer learning engagements to amplify learning at the County level. In the next phase of devolution, we anticipate increased application of home-grown solutions which have proven to be more affordable and sustainable.

As I conclude, and in light of the discussions held at the Seventh Annual Devolution Conference of November 2021, I urge County Governments to start having deeper conversations on matters of Indigenous knowledge. With climate change being a glaring reality, County Governments should put more effort in preservation and utilization of indigenous knowledge. I hope that we will have more success stories in this area in the next edition of the Compendium.

Asanteni sana!

H.E. Hon. Martin Nyaga Wambora, EGH.
Chairman,
Council of Governors

ACKNOWLEDGEMENT

> I am personally delighted about the publishing of this second edition of the Compendium since it is indicative that County Governments continue to be a fertile ground for innovation.....

This is to appreciate all the County Governments featured in this second edition of the Compendium. To Excellency Governors, thank you for your steadfast leadership in creating an environment that enabled your Counties to thrive in the application of various services delivery innovations. One of the key objectives of the CoG Maarifa Centre is to continuously engage with the County Governments and other devolution stakeholders to document lessons, experiences, best practices and service delivery innovations for replication- this Compendium is proof that this objective continues to be achieved.

I am personally delighted about the publishing of this second edition of the Compendium since it is indicative that County Governments continue to be a fertile ground for innovation in relation to service delivery. Citizen demands for affordable and accessible essential services are high. This demand is increased by Kenya's commitment to global agendas like the Sustainable Development Goals (SDGs) and the Paris Agreement on Climate Action. County Governments are therefore under pressure to deliver services where they are needed most and in a timely manner. To meet internal citizen demands and still contribute towards realization of global agendas like SDGs and climate action will not happen without innovation and application of best practices.

Maarifa Centre has set itself apart as a knowledge hub through its work in identifying, capturing, documenting and sharing innovations and best practices emerging from Counties. Further, the Centre developed the Handbook for Knowledge Capturing and Sharing for County Governments and conducted an assessment of knowledge management capabilities in Counties. Additionally, in this Financial Year, the Maarifa Centre also developed a model County KM office which we hope will be adopted by all Counties so that KM processes, systems and structures can be embedded within County Governments. All these efforts are geared towards supporting the institutionalization of KM in the Counties.

I convey heartfelt gratitude for each individual acknowledged as an author, editor, resource person or liaison, who made the generation of this Compendium a success. To the Maarifa Centre team that compiled and edited this Compendium, and the Committee technical leads for your unwavering support to the Maarifa Centre, we appreciate you. To our partners, thank you for always walking with us.

I look forward to reading many more of such publications, and I take this opportunity to make a clarion call to all Counties to continue on the innovation path and seek to deliver the highest standards of services to Kenyans. For every person who interacts with this Compendium and to all those stakeholders who are regular visitors on our Maarifa Centre e-platform maarifa.cog.go.ke, be inspired and assured that devolution is working.

Mary Mwiti
Chief Executive Officer,
Council of Governors

INTRODUCTION

This Compendium is the second edition of a bi-annual publication pioneered in 2021 by the Council of Governors' knowledge hub, the Maarifa Centre. The inaugural edition was a collection of County success stories in the fight against COVID-19.

Having brought the pandemic under control, County Governments refocused their efforts on improving service delivery while also putting measures to recover from the impacts of COVID-19.

This edition features County service delivery good practices and innovations from 13 Counties, arranged under seven sectors, namely Health (5); Gender and Social Services (2); Education (2); Water, Forestry, Environment and Climate Change (7); Youth, ICT and Innovation (3); Agriculture and Value Addition (1); and Lands, Planning and Urban Development (1). The innovations were documented and shared among Counties and other stakeholders between July 2021 and December 2021 through the Maarifa portal and social media platforms, and at events hosted or attended by CoG staff.

Some stories are brief, while others are detailed. The short stories highlight the problem that needed to be addressed, the innovation that was implemented and the outcome. The detailed stories highlight the problem that needed to be addressed, describing the numerous challenges that were faced; the innovation adopted and how it was arrived at, and the steps that were followed in its implementation; the outcomes; lessons learnt during implementation, and recommendations to Counties that may want to replicate it. The stories can be downloaded separately from the Maarifa portal using this link: https://maarifa.cog.go.ke/

This Compendium is available for free on the Maarifa portal and in hard copy is written for County Government officials to enhance knowledge sharing and timely adoption of the good practices and innovations deriving from various experiences, to serve citizens better. Other devolution stakeholders such as the national government, development partners, civil society, community-based organisations, private sector, researchers and citizens themselves, will find it useful too.

SECTOR: HEALTH

MEDICINES AND THERAPEUTICS COMMITTEES RESPONSE TO SAFE USE OF ANTIMICROBIALS IN NYERI COUNTY

Introduction

Antimicrobial Resistance (AMR) is the ability of microorganisms to evade the effects of drugs that could otherwise inhibit their growth or kill them. Factors that have led to the growing resistance problem include increased consumption of antimicrobial drugs, both by humans and animals, and improper prescribing of antimicrobial therapy by clinicians. In Nyeri County, there were similar problems of improper use of antimicrobials drugs, where the facilities struggled with initial prescription of broad-spectrum antibiotics that are unnecessary instead of targeted therapy based on clinical symptoms and likely organisms for the infections, and not guided by any treatment guidelines. Clinicians would prescribe antibiotics for infections due to a myriad of other causes like viruses and fungi and not bacteria. These problems were brought about by inadequate mentorship of the clinicians by their seniors, patient pressure for antibiotic prescriptions, inadequate laboratory investigation, complacency of health workers and the fact that most antibiotics have a wide therapeutic index, meaning they have low toxicity potential thus could be prescribed without fear of causing adverse drug reactions to the patients.

The resulting outcomes were that patients would develop antimicrobial resistance specifically to antibiotics. They would be treated severally for one infection without being cured. This resulted in the use of higher classes of antibiotics that are more expensive and more toxic; this notwithstanding the other direct costs of previous treatments and indirect costs of visiting the hospitals several times and mental anguish on the patients. The hospitals also would incur high costs because of continual purchases of medication and administration due to costs associated with repeated visits since the patient queues would perennially be very long, necessitating more staff to attend to them.

This also resulted in an alarming spread of multi- and pan-resistant bacteria (also known as “superbugs”) that cause infections that are not treatable with existing antibiotics, and this would be seen in outpatient but was worse in the inpatient setting. For example, urinary tract infections affecting patients with catheters due to bladder outlet obstruction and the general population presenting with urinary symptoms that had been treated with injectable ceftriaxone and higher-order fluoroquinolones (class of antibiotics approved to treat or prevent certain bacterial infections) were not responding after several cycles of therapy. Pharyngitis affecting paediatrics and adults that would normally be treated with oral amoxicillin was being treated with ceftriaxone injections. Reproductive tract infections affecting mostly sexually active adults were initially being treated with 5-day courses of cefixime or injectable ceftriaxone instead of cefixime stat or doxycycline with azithromycin and metronidazole. The overuse of ceftriaxone was also very common in both inpatients and outpatients. This indiscriminate use would result in this drug not working for other infections it is meant for; for example, hospital-acquired pneumonia or bacterial meningitis; many cases of which then required ceftazidime.

Activities Undertaken to Implement the Medicines and Therapeutics Committees as Response to the Safe Use of Antimicrobials

The activities were in line with those of the antimicrobial stewardship programme adapted from the World Health Organization (WHO). Driven by the passion to address Antimicrobial Resistance, preserve lifesaving antimicrobials and most importantly provide quality health care, the County Executive Member (CECM) for Health was very instrumental in bringing on board implementing partners USAID through the Medicines, Technologies, and Pharmaceutical Services (MTaPs) programme. The CECM had worked at the national level where she had gathered experience in antimicrobial stewardship and was cascading the same to the county level.

Through the CECM’s leadership, level 4 and 5 health facilities in the whole County revived their Medicines and Therapeutics Committees (MTCs). A Medicines and Therapeutics Committee is a multidisciplinary committee responsible for overseeing policies and procedures related to all aspects of medication use. It evaluates the clinical use of medicines, and formulates policies for managing medicines use and administration. It also has broad responsibilities in determining which medicines will be available in the hospital and how they will be used. MTC membership in Nyeri County facilities was reviewed comprising: the hospital consultants, pharmacist specialists, clinical officers, nurse manager, commodity nurse and the laboratory in-charges.

In October 2019, all the MTCs of all the level 4 and 5 hospitals were trained on the MTC core mandate and the need to be working through simple but very impactful action plans. A 3-day training on antimicrobial resistance was done, which included, in principle, its definition and evolution, guidelines for managing common infections, antibiotic allergies, and strategies for implementing antimicrobial stewardship programmes. All facility MTCs thereafter developed standard action plans with the

following activities: setting up antimicrobial stewardship (AMS) committees, reducing prescriptions with antibiotics in them and carrying out periodic antibiotic audits of the same, formally appointing members of the MTC through formal appointment letters, giving the MTC their terms of reference and seeking administration support for MTC activities.

MTCs held meetings to think through the operationalisation and after the meetings, the MTCs gave feedback to their administrators and were able to get support for their activities. By December 2019, the formal appointment letters and terms of reference had been issued to all the MTC members. This brought in a lot of motivation and commitment from MTC members. The AMS committees were also constituted as sub-committees of the MTCs with members drawn from MTC.

In January 2020, through the support of the County Government, workshops were carried out in the level 4 and 5 hospitals targeting all cadres. This activity started with two separate one-day trainings where 40 health workers in each of the hospitals were trained on the basics of antimicrobial resistance, protocols for managing common infections, i.e., pharyngitis, urinary tract infections, surgical site infections, community and hospital-acquired pneumonia, skin infections and allergies to antimicrobials. In Karatina, those trained included 12 registered clinical officers; 6 medical lab technologists; 12 nurses; 4 pharmaceutical technologists; 4 nutritionists and 2 medical officers. They were also trained on the Access, Watch and Reserve (AWaRe) categorization of antibiotics.

Other activities undertaken:

- In November 2019, all the health facilities and the Department of Agriculture and Fisheries commemorated the World Antimicrobial Awareness Week with talks and posters in the hospitals, at the cattle dips and within Chiefs' barazas1 respectively.

- On 4th august 2020, the AWaRe categorization was adapted for all facilities and a memo was sent out to sensitize all clinicians in Outpatient Department (OPD) on AWaRe categorization emphasizing reduction of the prescription of watch and reserve antibiotics.

- Following review, memos were also sent out to all clinicians in the hospitals stopping the use of ceftriaxone injection in outpatients. In the OPD, only patients reviewed by Registered Clinical Officers (RCOs) with post-basic qualifications were required to prescribe this as an initial dose for complicated Sexually Transmitted Infections (STIs) not responding to first-line drugs and for 3 days for infections like pharyngitis and URTIs not responding to access category medications.

- A whole month of follow-up with one-on-one encounters with the clinicians in the OPD was done. Clinician feedback and sensitization for those who were unaware of the memo when they prescribed watch antibiotics without following the memo advice was also done.

- Pharmacy staff were all sensitized on the above to ensure the measures were adhered to during dispensing. Also sensitized were four (4) pharmaceutical technologists, two (2) pharmacists and four (4) support staff.

- A County Antimicrobial Stewardship Interagency Committee (CASIC) comprising members of human health, animal, plant and marine health was revamped to tackle AMR from the ONE health approach[2].

- A CASIC strategizing meeting was held on 18th August 2020 to review county progress with the health, agricultural and fisheries sectors. The CASIC strategizing meeting carried out some important activities that included:

    - A radio programme on the local stations to educate on AMR

    - Development of a CASIC action plan

    - Sensitization to farmers in cattle dips and chief barazas on the use of antibiotics

    - A resolution that the regional veterinary laboratory to be sharing culture and sensitivity data with veterinary clinicians

- Antibiotic audits were done for October 2019, January 2020, and July 2020 as per the guidelines provided to assess the level of antibiotic use in the OPD. For the inpatient department, there were planned point prevalence surveys though these are yet to be done.

- Carbonated prescriptions were reviewed with the hope of improving accountability in clinicians and to enhance antibiotic audits.

- In September 2020, the AMS committees sensitized inpatient staff in all the departments on AWaRe categories, restriction of watch and reserve antibiotics to only medical officers and consultant prescription. The staff sensitized were:

    - Surgery Department: two (2) consultants; two (2) Medical officers interns, six (6) Clinical officer interns.

    - Paediatrics Department: one (1) consultant, two (2) Medical officer interns, one (1) Medical officer, five (5) Clinical officer interns.

1 Baraza is a Swahili word that describes the semiformal and mostly regular public (open air) meetings convened by a local chief for purposes of addressing local issues and facilitating the percolation of state agenda and policy down to the grassroots.

2. One Health is an integrated, unifying approach that recognizes links between the health of people, animals and ecosystems (WHO, 2022).

- Obstetrics and Gynecology Department; one (1) Medical officer, two (2) Medical officer Interns, three (3) Clinical officer Interns.
- In the internal medicine department: one (1) Medical officer, two (2) Medical officer Interns, six (6) Clinical officer interns and seven (7) nursing Heads of Departments.

- In September 2020, the inpatient staff were sensitized on pre-authorization forms that were to be filled by medical officers and consultants for watch and reserve antibiotics only.
- Clinical pharmacists who were part of the medical teams of the major ward rounds in medical and pediatric wards advised on antibiotic choices.

The Antimicrobial Stewardship Committee comprises a senior consultant as the chairman, the physician as the vice-chairman, one clinical pharmacist as the secretary, another clinical pharmacist, the clinical officer in charge and the nurse manager.

These activities required a minimum amount of funds since the facility-based trainings were done during the normal duties of the health workers and entailed the AMS committee going around the various departments. The initial meetings by MTaPs were in a hotel and had a conference package for about 60 participants (approximately at KSh 1,500 per participant). The January 2020 workshops cost KSh 40,000 for each facility for the level 4 and 5facilities within the County. Printing costs were absorbed in the routine office stationery.

The success was through collaboration with the USAID-MTaPs Programme and the direct financial and technical support from Dr. Ndinda Kusu and Dr. Collins Jaguga, their specific support included:

1. Funded the initial capacity building workshop
2. Trained the members of the MTC and AMR committees
3. Supported with training tools i.e. educational materials and guidelines for MTCs operations and AMS strategies
4. Provided technical assistance to the MTC and AMR committees throughout the process

Essential staff for the success of the activities in Karatina included Dr. Stephen Warui Chairman of MTC/AMS, Dr. Louisa Mahinda Vice-chairperson, Dr. Sakina Mamdani Member, Dishon Wambugu Head of Clinicians and Penina Muthami Deputy Matron.

For sustainability, these activities are being carried out continually as a standing mandate of the AMS/MTC committees. The formal appointment of members provided commitment and ownership among the members. The leadership support from the CECM in charge of Health has been very critical in addressing sustain

Results of the best practice

The main objective of the AMS programme was to change the culture of prescribing antimicrobials, especially antibiotics, to ensure proper judgment before prescribing and ensure accountability for all prescriptions for infectious diseases. This was to be measured periodically through auditing prescriptions in the outpatient and through point prevalence surveys to monitor trends in antibiotic usage.

Immediate outputs included:

1. Training of health workers on the proper use of antibiotics;
2. Complete stoppage of injectable antibiotics especially ceftriaxone in the outpatient department;
3. Rollout of the AWaRe antibiotics' categorization in level 4 and 5 hospitals in the county
4. Increased supervision and monitoring of prescriptions;
5. In Karatina sub-county hospital, in July 2020, 35% of outpatient prescriptions had antibiotics. This was a decline from February 2020 which stood at 41% and prior months January 2020 to October 2019 at 36% and 50% respectively;
6. Increased collaboration between health, agriculture, and fisheries departments to fight AMR through one health approach; and
7. CASIC strategic plan to combat AMR.

The outcomes included:

1. Increased compliance to treatment guidelines, protocols, and AWaRe categories;
2. Ownership of the programme with all staff understanding of the need for Antimicrobial Surveillance;
3. Enhanced teamwork among the health workers starting within the MTC;
4. Increased awareness of AMR to public and health workers and measures to combat it; and
5. Patients receive cost-effective and high-quality care.

The key activities that yielded these outputs are the mentorship and support supervision from the CECM, the MTaPs support, County AMS focal person and AMS

committees that ensured action plans were drawn and implemented and the facility MTCs that meet regularly to implement and review facility antibiotic utilization and take action.

Currently, there is a reduction in supervision due to the COVID-19 pandemic. However, the measures put in place previously have been inculcated in the work culture. The prevalence studies are yet to be carried out in all the hospitals, having only been done in the County Referral Hospital. The outpatient audits have also reduced.

Lessons learnt

The areas that worked well and contributed to the overall success include the following:

1. Supportive leadership. This encouraged the various teams to believe this was possible. Being the head of the County department for health and having a very good understanding of the AMR problem, the CECM was able to follow up on targets that had been agreed upon and insisted on results from all the hospital teams. The appointment of a County AMS focal person to also follow up on decisions made in the action plans was very helpful in coordination across the health facilities and other stakeholders outside the health sector in addressing antimicrobial resistance.
2. The formal appointment of the facility MTCs was very important in developing commitment and ownership of the process.
3. A lot of support in terms of educational material was given by the partner organization Medicines, Technologies and Pharmaceutical Services, that is, WHO educational package on AMR, printed copies of the national strategy to combat AMR, brochures, and pamphlets about AMR for the public and banners to commemorate world antibiotic week. They also provided the antibiotic audit tool for the outpatient prescription. These were things that were not available to the County previously.
4. The team approach to implementation whereby all the cadres were part of the AMS committee. This had been there previously but after the start of support supervisions, the members became more active contributing more time and ideas to the committee activities. The members were also active in rallying their respective cadres into buying into the AMS goals.
6. Having a senior respectable consultant in the AMS committee to lead the activities in the hospital was very helpful. Information received from the consultant attracted more urgent attention from other staff.
7. Periodic action plans were developed, and constant periodic reports of work done forwarded to county and MTaPS who provided technical assistance in reviewing the progress. Some of the areas that faced challenges include the following: The importance of stakeholder engagements in safeguarding medicines use for the benefit of patient outcomes. This is because some stakeholders felt they had been undermined by the new policies. After doing a stakeholder analysis, the stakeholders should be handled accordingly to avoid this problem.
8. Also, with the advent of COVID-19, the AMS restrictions for antibiotics were relaxed for fear of super infections occurring and not being adequately treated. This was a challenge that is still being addressed as more knowledge is generated about the Corona Virus disease.
9. The need for continuous mentorship for continuity
10. The County constituted a committee with all cadres involved as members to have a multidisciplinary approach to patient management. This approach worked well for the County.

Conclusion

- The most important lesson in this exercise was the critical roles the MTC played in hospital patient management. Most times, the patient care is solely at the discretion of the individual providers, the clinician who has been given a lot of trust by society. On the other hand, the clinician is under a lot of pressure from this societal privilege to perform to the highest standards. This delicate situation requires to be moderated by an authority that is tempered with adequate knowledge and judgment; an authority that has well thought out ideas and solutions to solve the problems that will arise in any patient-clinician encounters. This is the MTC.
- An MTC, being multidisciplinary caters to all the players; clinicians, nurses, pharmacy, and laboratory staff are all mentored by their seniors and protocols are followed properly and this ensures the best patient outcomes.
- The MTC requires champions to push the agenda; in this case, the whole team bought the idea of AMS and pushed it to all their departments. It is very important to have a passionate leader with a wide vision to see the problem to be addressed. Leadership support for supervision was key to the success of the programme.

- For the success of any MTC, proper and strong leadership is key. MTCs should be formally appointed and anchored for proper functioning, if possible legislated as important teams to manage patient care, treatment outcomes and appropriate use of medicines particularly antibiotics that are on the verge of being lost from wide scale development of drug resistance.
- Administrative support is required for MTCs for long term sustainability.
- A multi-sector approach to the One Health approach must be made practical for the benefit to be achieved.
- The goals of MTC should be incorporated in performance appraisals of the MTC members so that there is more drive to achieve their goals. Further, rewards and sanctions should also be operationalized to ensure staff stay motivated to achieve their targets.

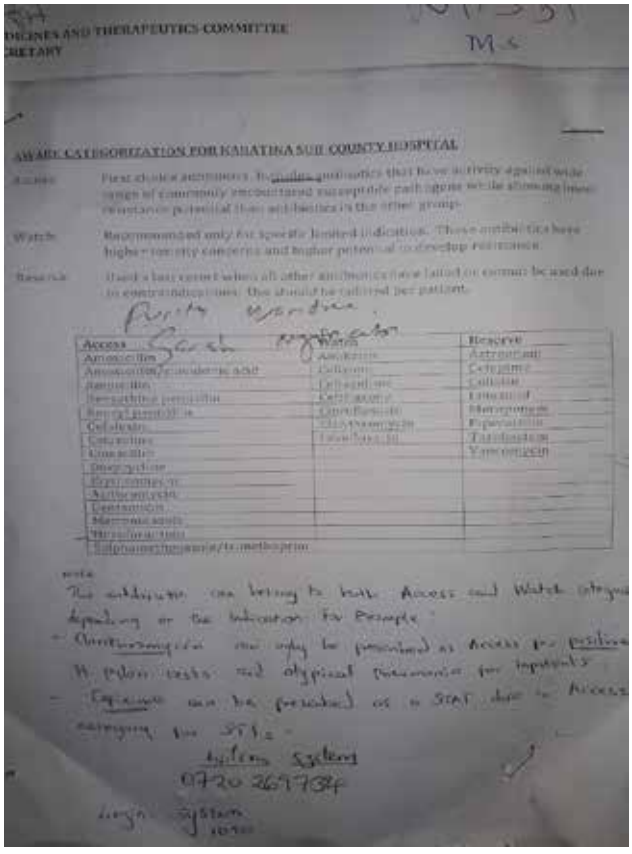
Some of the limitations encountered that may threaten future work are:

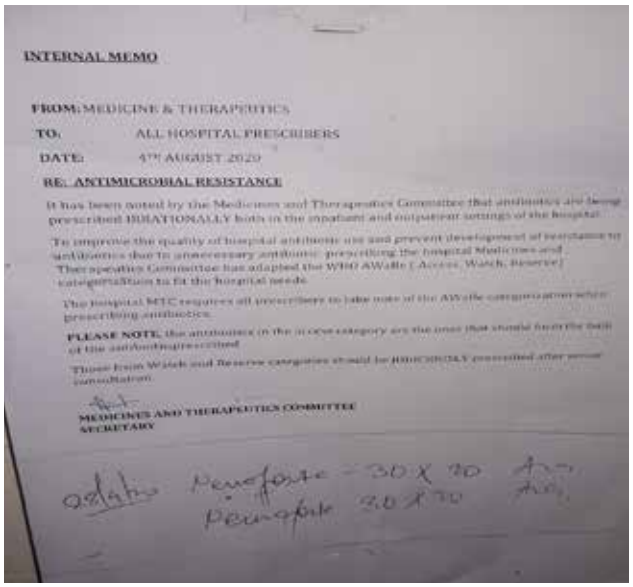
- When meetings of MTC reduce there is reduced motivation to continue with the activities. This was seen in the COVID-19 pandemic that called for all physical meetings to stop. The MTC needs to periodically meet to evaluate progress and address challenges that crop up.
- The push from County leadership should be continual for the success of the programme. This push might decline over the years and committees lose focus especially when not well anchored through a proper institutionalization process.

Further reading:

- A list of references and source documents that give additional information on the best practice for those who may be interested in knowing how the results benefited the population can be provided
- https://www.nyeri.go.ke/wp-content/uploads/2021/02/Nyeri-CASIC-WORK-Plan.pdf
- https://www.facebook.com/County19Nyeri/posts/governor-kahiga-launches-casic-work-planh-e-governor-mutahi-kahiga-has-officiall/3985630011449121/

Launch of the Nyeri County Antimicrobial Stewardship Interagency Committee (CASIC) Work plan





INTERNAL MEMO

FROM: MEDICINE & THERAPEUTICS

TO: ALL HOSPITAL PRESCRIBERS

DATE: 4TH AUGUST 2020

RE: ANTIMICROBIAL RESISTANCE

It has been noted by the Medicines and Therapeutics Committee that antibiotics are being prescribed IRRATIONALLY both in the inpatient and outpatient settings of the hospital.

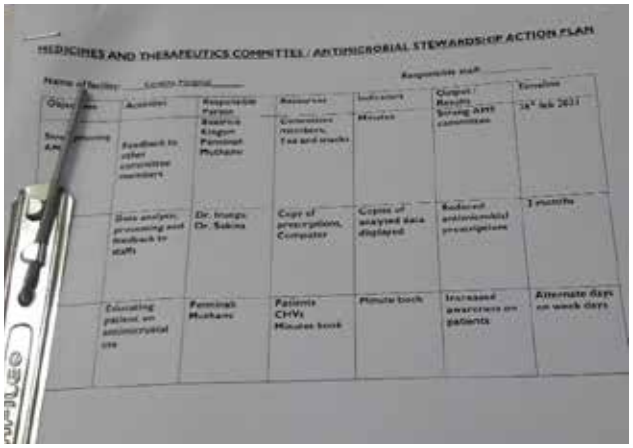
To improve the quality of hospital antibiotic use and prevent development of resistance to antibiotics due to unnecessary antibiotic prescribing the hospital Medicines and Therapeutics Committee has adopted the WHO AWaRe (Access, Watch, Reserve) categorization to fit the hospital needs.

The hospital MTC requires all prescribers to take note of the AWaRe categorization when prescribing antibiotics.

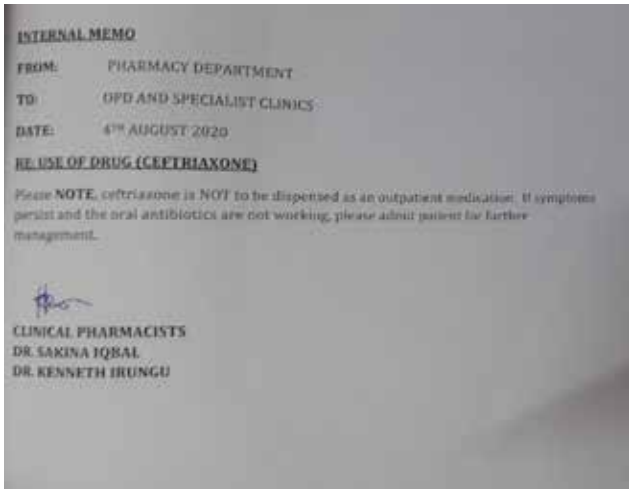
PLEASE NOTE, the antibiotics in the in case category are the ones that should form the bulk of the antibiotics prescribed

Those from Watch and Reserve categories should be PRUDENTLY prescribed after proper consultation.

MEDICINES AND THERAPEUTICS COMMITTEE SECRETARY



MEDICINES AND THERAPEUTICS COMMITTEE / ANTIMICROBIAL STEWARDSHIP ACTION PLAN



INTERNAL MEMO

FROM: PHARMACY DEPARTMENT

TO: OPD AND SPECIALIST CLINICS

DATE: 4TH AUGUST 2020

RE: USE OF DRUG (CEFTRIAXONE)

Please NOTE, ceftriaxone is NOT to be dispensed as an outpatient medication. If symptoms persist and the oral antibiotics are not working, please admit patient for further management.

CLINICAL PHARMACISTS
DR. SAKINA IQBAL
DR. KENNETH IRUNGU

COMBATING THE SILENT PANDEMIC: ANTIMICROBIAL STEWARDSHIP PROGRAMME AT THE NYERI COUNTY REFERRAL HOSPITAL

Introduction

- Antimicrobial resistance is a natural phenomenon exhibited by microorganisms called bacteria, fungi, viruses and parasites, and these cause infections in humans and animals.
- Once these microorganisms develop resistance, they do not respond to antimicrobial drugs thus making the treatment of infections caused by the resistant microorganisms difficult and expensive.
- To combat antimicrobial resistance, antimicrobial stewardship (AMS) is paramount in preserving the effectiveness of existing antimicrobial agents thus reducing the cost of treatment and prolonging life.
- At the Nyeri County Referral Hospital (NCRH), it was noted that there was inadequate data on the prescribing patterns of antimicrobial agents and the resistance patterns of microorganisms that cause common infections that are treated at the hospital. In addition, data on the prescriber's knowledge in prescribing antimicrobial agents was scarce.
- Furthermore, there were no formal AMS structures in place at the hospital.

Implementation of the practice

- The County Department of Health Services initiated an Antimicrobial Stewardship program in 2018
- The County Government collaborated with USAID-funded programme MSH–MTaPs and carried out training of the Medicines and Therapeutics Committee (MTC) team on antimicrobial stewardship in August 2018.
- The MTC at the Nyeri County Referral Hospital then integrated AMS into its activities in May 2019 and selected an AMS team. The MTC meets bi-monthly and reports on the progress of both MTC and AMS planned activities to the Hospital Management Team every month.
- The AMS team adopted the Access, Watch and Reserve (AWaRe) classification of antimicrobial agents. Antimicrobial drugs in the:
    - Access group have activity against a wide range of commonly encountered susceptible pathogens and have a lower resistance potential than antibiotics in the other groups.
    - Watch group have higher resistance potential

and include most of the highest priority agents among the Critically Important Antimicrobials for Human Medicine. These antimicrobial drugs are at relatively high risk of selection of bacterial resistance and should be prioritized as key targets of AMS programmes and monitoring.

- Reserve group should be reserved for treatment of confirmed or suspected infections due to multi drug-resistant microorganisms. These antimicrobial drugs should be treated as "last resort" options, which should be accessible, but their use should be tailored to highly specific patients and settings when all alternatives have failed or are not suitable. Furthermore, these medicines should be protected and prioritized as key targets of AMS programmes involving monitoring and utilization reporting to preserve their effectiveness.
- The AWaRe classification tool contributes to combating AMR as it allows policymakers to:

- effectively monitor the use of antimicrobial drugs.
- align their essential medicines lists (EML) with the World Health Organization (WHO) model list. This minimizes access to antimicrobial drugs as they are listed in the EML as per their level of use.
- establish or update treatment guidelines thus encouraging appropriate use of antimicrobial drugs for any given infection.
- The AMS team carried out the baseline survey on the prescribing pattern of antimicrobial medicines in May 2019 and fed the information back to health workers during subsequent continuous medical education sessions. The baseline survey focused on the proportion of antimicrobials prescribed, the proportion of antimicrobials prescribed in children and adults, the cost of antimicrobials prescribed, the errors in the prescribed antimicrobials and the appropriateness of the prescribed antimicrobials.
- The AMS team trained targeted prescribers and nurses on AMS in October 2019. Since then, this activity has been taking place after every audit.
- The AMS team initiated weekly sensitization sessions on AMS targeting prescribers and nurses in March 2021.
- The hospital AMS team together with the Nyeri County AMS focal person carried out periodic antimicrobial prescribing audits to monitor the antimicrobial agents prescribing pattern.
- The AMS team initiated data collection on antimicrobial agents' resistance patterns.
- The AMS team developed an antimicrobial preauthorization request form for antimicrobial agents in the Watch and Reserve categories, piloted the form and rolled it out for use in the Inpatient Department.
- The AMS team together with Merck carried out a point prevalence survey on antimicrobial use in the Inpatient Department.
- The AMS team carried out a survey on antimicrobial drug use at the hospital's palliative care unit.

Who were the key implementers and collaborators and what were their roles?

- Implementers:
  - the Nyeri County Referral Hospital AMS team was comprised of:
    - Dr. Sarah Kibira, Pharmacist and AMS focal person
    - Mr. Patrick Kamau, Microbiologist and Head of Laboratory Department
    - Ms. Winfred Githinji – Microbiologist and Diagnostics Stewardship focal person
    - Jane Mugo, In charge of clinicians
    - Dr Edwin Munene, Pharmacist
    - Mrs Caroline Mwai, Pharmaceutical technologist
    - Dr. Oscar Agoro, Pharmacist and Nyeri County Antimicrobial Stewardship focal person
  - Collaborators
    - Dr. Ndinda Kusu, Country Director, MSH - MTaPs, nkusu@mtapsprogram.org
    - Josiah Mwenda, Diagnostics Specialist, Infectious Diseases Detection & Surveillance (IDDS) jnjeru@fhi360.org
- Dr. Austin Apinde, Medical Advisor, MERCK, austine.apinde@merck.com

What were the resource implications?

- The AMS activities are part of the duties and responsibilities of the AMS sub-committee members. However, the training sessions are supported by the Nyeri County Referral Hospital Management Team. Technical support for

trainings and data collection was received from the collaborators mentioned above.

How does the County plan to sustain the best practice in future?

- Nyeri County was the first County in Kenya to establish the County Antimicrobial Stewardship Interagency Committee (CASIC) whose membership includes key players in AMS such as the AMS team at the Nyeri County Referral Hospital. The main objective of CASIC is to embrace the One Health approach in combating antimicrobial resistance. Further, the County is the first in Kenya to develop, launch and initiate the implementation of the CASIC Strategic Plan for the year 2021/2022.
- AMS activities are part of the performance contract of the Nyeri County Executive Committee Member (CECM) for Health for 2018/2019, 2019/2020, and 2020/2021, and as such, selected key health workers have to align their key performance indicators with the CECM's performance contract as part of the cascade.
- The County has also included a budget for AMS activities in the Annual Work Plan for the Department of Health (for the year 2018/2019, 2019/2020 and 2020/2021).
- Approximately 30 members of MTCs from different health facilities within Nyeri County have been trained on AMS and they act as Trainers of Trainers (ToT) who continuously train other members of MTCs and other health workers on AMS.
- The AMS team at the Nyeri County Referral Hospital also mentors MTC/AMS members from other hospitals, i.e. Karatina Sub-County Hospital, Narumoru Hospital and Mt. Kenya Sub-County Hospital on prioritizing, implementing and monitoring AMS activities.

Results of the practice

- Approximately 200 health workers have been sensitized on AMS at the hospital.
- The use of the antimicrobial pre-authorization request form at the hospital unearthed one of the key challenges, that is, inadequate microbiology services at the hospital. It was noted that crucial microbiology tests such as blood culture tests were not being carried out due to a lack of reagents.
- The antimicrobial pre-authorization request form in use at the hospital has since been adopted by the County Department of Health for use in tracking antimicrobial drugs' use in the Watch and Reserve groups in the other County hospitals.

Table 1: Antimicrobials use audit results from May 2019 to March 2021 of the NCRH Outpatient Department

Audit	*% of prescriptions with antimicrobials*	*% of prescribed antimicrobial medicines from the Access category.*	*Cost of antimicrobials prescribed (KSh.) per audit*	*No. of prescriptions with errors per audit*
Baseline May 2019	61.8%	45%	208,995.00	236
March 2020	53.8%	83.3%	73,083.00	21
August 2020	42.6%	87.1%	187,115.00	49
March 2021	53.4%	87.6%	92,084.00	28

- From the table above, prescribers' sensitization sessions on antimicrobial stewardship took place after every audit, and the feedback was shared with the team which discussed the reasons the proportion of prescriptions with at least one (1) antimicrobial agent was still high and the possible strategies to reduce the high rate of antimicrobial prescribing.
- The rise in the proportion of prescriptions with at least one (1) antimicrobial agent in the March 2021 audit was attributed to the third wave of SARS-CoV-2 infections where most patients were prescribed antimicrobial drugs, especially Azithromycin to either treat respiratory signs and symptoms associated with SARS-CoV-2 infections no matter how mild they were or to protect them from respiratory bacterial infections secondary to SARS-CoV-2 infections. However, the WHO guideline on the management of SARS-CoV-2 infections was discussed and prescribers were encouraged to adhere to it.
- The proportion of prescribed antimicrobial agents from the Access category rose from 45% to 87.6%, and this was commendable as it was maintained above 60% in the fourth audit. However, this could also be attributed to the fact that most of the antimicrobial agents available in the hospital are from the Access category and very few in the Watch and Reserve category.
    - Maintaining the proportion of prescribed antimicrobial drugs in the Access group at above 60% is important as this discourages overuse of antimicrobial drugs in the Watch and Reserve groups which are targets of AMS programmes.
- The hospital continues to collect data on antimicrobial agents to draw out resistance patterns. A total of 123 samples have been analyzed so far and findings have informed adjustments in sensitization activities targeting nurses and clinicians. Challenges identified concerning collection of cultures and testing have also been discussed with microbiology teams. The process of sensitivity testing faced the following hurdles:

- Most of the samples collected for culture and sensitivity testing, at the beginning, were contaminated with normal flora.
    - After this was noted, sensitization on appropriate sample collection techniques was conducted with nurses and clinicians responsible for sample collection and data collection began afresh.
- After the above sensitization sessions, sample collection continued, but during culture and sensitivity testing, it was observed that there was no consistency in the list of drugs the samples were exposed to, therefore, no meaningful conclusions could be made from the data collected. Once again, this informed discussions with microbiology teams for corrective action.

- Data collection is now ongoing awaiting analysis.

Lessons learnt

What worked really well – what facilitated this?

- The training sessions were a success with 95% attendance recorded.
- This was facilitated by involving the hospital's top leadership, i.e., the Office of the Medical Superintendent and the Office of the Clinical Officers in charge.
- The introduction and implementation of the antimicrobial preauthorization request form was also a success as the different cadres of health workers, including consultants, medical officers, clinicians and nurses were sensitized about its benefits before its rollout.
- Stepwise documentation of the progress of AMS activities being implemented is key in monitoring interventions being implemented, identifying challenges that may arise in the process and intervening on time as was the case when collecting data on antimicrobial drugs sensitivity patterns.

What did not work – why did it not work?

- The weekly sensitization sessions, though ongoing, have not worked very well due to:
    - competing tasks of the targeted cadre which is further attributed to staff shortage.
    - leave and off-duty schedules.

What would you do differently? What would you do in the same way?

Reduce the frequency of the sensitization sessions to monthly and communicate the same in good time so that the targeted group reorganizes its working schedules appropriately.

Conclusion

- A formal antimicrobial stewardship programme is vital in promoting the appropriate prescribing of antimicrobials as shown in the results section above.
- Involving the leadership of a hospital is paramount in ensuring the successful implementation of antimicrobial stewardship activities and sustainability.
- Embracing a collaborative approach when implementing antimicrobial stewardship activities promotes ownership and fosters good working relations among the different cadres of health workers handling antimicrobial agents.
- A functional microbiology laboratory plays a key role in the success of antimicrobial stewardship programmes.
- Periodic monitoring of the implementation of AMS activities is key in assessing whether the objectives of these activities are being met and if not, appropriate actions are taken without delay.

What would you avoid?

- Decision making without involving key players when implementing antimicrobial stewardship.

Further reading:

1. Nyeri County CASIC Strategic Plan 2021/2022.
2. Annual Work Plan for the Department of Health 2018/2019
3. Annual Work Plan for the Department of Health 2019/2020
4. Annual Work Plan for the Department of Health 2020/2021
5. How to investigate drug use in health facilities. Selected drug use indicators. EDM Research Series No. 007. https://apps.who.int/medicinedocs/en/d/js2289e/
6. The development of standard values for the WHO drug use prescribing indicators. https://archives.who.int/prduc2004/rducd/ICIUM_Posters/1a2_txt.htm

REAL-TIME REPORTING USING MOBILE APPLICATION BY COMMUNITY HEALTH VOLUNTEERS IN SIAYA COUNTY, KENYA

Context and Challenge

Siaya County's health sector is mandated to promote and participate in the provision of integrated and high-quality curative, preventive and rehabilitative services that are equitable, responsive, accessible and accountable to all. The key achievements of the sector include the reduction of under-5 mortalities from 227/1000 in 2008 to 159/1000 in 2014 and infant mortality from 142/1000 in 2008 to 54/1000 in 2014. The sector has also seen increased immunization coverage for under-1-year-old from 60% in 2008 to 80% in 2014.

Despite these achievements, the sector faces numerous challenges, which include; late reporting of health data, poor infrastructure for service delivery, and inadequate qualified health personnel. Besides, the HIV prevalence stands at 17% against the national average of 6.4% and maternal mortality is at 488/100,000.

The late reporting by Community Health Volunteers (CHVs) was aggravated by several factors such as the unavailability of the MoH tools 513, 514 and 515. In some cases, at the end of the month, some CHVs would not be available for the data collection, hence the health sector would miss some key indicators such as maternal deaths. This late reporting compromised the accuracy of the data to improve the health status of the county.

In the medium term, the sector addressed these challenges by partnering with UNICEF and Medic Mobile to improve the reporting of health data. This partnership resulted in the use of the Medic Mobile App, currently known as the MoH Siaya App by CHVs for timely reporting of health data from the households. The integration of the MoH Siaya App was supported by success in various areas, including The Millennium Villages Project in which CHVs reported on health activities using mobiles; a CBO in Ugunja called Community Resource Centre was using 30 CHVs to report on health using mobiles; in Alego Usonga in Karemo Ward, a partner was supporting them to report on health using mobile phones. All of these were giving real-time reporting.

The CHVs are responsible for collecting health-related data at the household level, monthly. The data collected includes Antenatal Care (ANC), Postnatal Care (PNC), Immunization, Integrated Community Case Management (ICCM), Family Planning, Nutrition, Community-Based Disease Surveillance and HIV/AIDs.

Response and Actions

During the implementation phase of the MoH Siaya App, the CHVs were recruited from the already existing ones based on the following criteria:

- Permanent residents in the community
- Mature and responsible members of the community
- Acceptable and respected members of the community
- Self-supporting
- Ready to volunteer services to the community
- Form Four leaver and literate, unless where the situation does not allow
- Possess leadership qualities

After recruitment, the CHVs were taken through a 13-module training, which included HIV, TB, Non-Communicable Diseases and water-borne diseases. A CHV was then expected to take care of 100 households which is an average of 5000 community members within a community unit. A community unit includes complete coverage of households through a mapping exercise.

Thereafter, the Community Health Assistants who are the CHV supervisors, were taken through a three-day Training of Trainers (ToT) session to familiarize themselves with operations of the App. The CHVs were also trained on the use of the App. The MoH Siaya App is twofold: the inbuilt App used by the CHVs on household visitation and the Clip Folio App used by the CHAs for supervision of the CHVs. At the highest level of supervision is the County Health Management Team, which can access data from all the sub-counties.

The MoH Siaya App, having been homegrown, was then piloted in two sub-counties and later scaled up to all the six sub-counties in Siaya. The information from the App is being used by the Sub-county focal persons and the Health Management Team (HMT) for planning and implementation of health activities during dialogue days, such as the provision of medical supplies based on the number of community members ailing from a specific ailment. Also, the information is used to monitor and evaluate the health indicators from the dashboard of the App and take immediate action. From the data, CHVs can refer community members to health facilities.

In addition, possible fabrication of data by the CHVs is taken care of through regular spot checks by the CHAs and Sub-county focal persons.

Outcomes and Results

Through the use of the App by the CHVs, the incidence rates of diseases such as cholera have been eliminated. The CHVs provide essential treatment of some common ailments at the household level. Some of the treatments provided include: the administration of Al (An approved treatment for uncomplicated malaria among adults and children), Oral Rehydration Salts and Zinc for diarrhoea

and referrals for suspected pneumonia cases. The App also has a reminder schedule for PNC, especially Immunization. The app has also enabled easy identification of expectant mothers for utilization of ANC and deliveries by skilled health workers.

The app has also led to real-time monitoring of CHV activities. The CHAs can review the CHVs' activities. The CHVs data enables quick intervention, e.g. a child who is supposed to go for immunization.

Lessons Learned/Benefits/Challenges

- The initial version of the App, 2.4 was slow in loading the data. This was managed by upgrading the App to version 3.3.
- Loss or malfunctioning of the smartphones has been taken care of by ensuring there is a replacement by the respective CHV.
- The App enables CHVs to collect data in network constrained areas and upload it into the system whenever the network is available.
- The App enables the identification of CHVs who are weak in reporting. This is being managed by establishment of groups (3-4) CHVs who assist each other.
- Some CHVs are illiterate and thus they lag behind. But their semi-literate and literate colleagues assist them.
- Some key health indicators are not in the App and need to be added.
- The App needs to be integrated with the Demographic Health Information System (DHIS).

Conclusion

- The inclusion of key partners in the identification and utilization of specific indicators is important. For instance, there is a partner with a specialty in nutrition for the related indicators.
- The willingness of the county health team to support the use of the App is important for success.
- The CHVs require proper training for data collection using the App.
- The CHVs should be able to interpret the data since the variables are defined in the App
- It is important to integrate the App into the DHIS from the onset.
- To improve service delivery in the community, you require real-time reporting and quick action.
- Information is power and so is timely reporting of health issues.

MAKUENI UNIVERSAL HEALTHCARE PROGRAMME (MAKUENICARE)

Introduction

In 2013, Kenya implemented the Constitution of Kenya 2010 that introduced significant change in governance by establishing the 47 devolved County Governments. The mandate to deliver health services was assigned to Counties-managing primary health facilities and County referral hospitals. The National Government retained the mandate of national policy, research and development, training and capacity building, and health service delivery at the national referral hospitals. The Government of Kenya is committed to the delivery of universal health coverage (UHC) as articulated in the Big Four Agenda and the Medium-Term Plan 3 (2018–2022).

The Makueni Universal HealthCare (MakueniCare) Initiative was intended to provide a set of essential healthcare services at all levels of care so that patients benefit by getting preventive, promotive and curative services conducted within the County facilities at the expense of the County Government. The scheme is largely financed through the County Social Service Fund. This is through budget allocation approved by the County Assembly.

With the poverty index at 60.4% as per the Kenya Demographic and Health Survey of 2014, MakueniCare was poised to tremendously boost health access by reducing the cost barrier. When the County Government was established in 2013, it was realized that most of the people of Makueni would sell land and exchange family income to pay medical bills for relatives. This programme provides a mechanism for the inclusion of all the Makueni County citizens into the medical scheme to cater for the cost of treatment within the County. It focuses on providing accessible, affordable, sustainable, and quality healthcare to the citizens of Makueni through effective and sufficient resource mobilization.

According to the national health accounts FY 2015–2016, the out-of-pocket (OOP) health expenditure was 32.8% and an estimated 450,000 Kenyan households are pushed into poverty every year as a consequence of health expenditure (Barasa et al., 2017). Such expenditure should not push families and individuals to poverty and/or extreme financial hardship. It is imperative, therefore, for access to health services to be based on need and not on ability to pay. In Makueni County, the percentage of the population below the poverty line is 34.6% (Economic Survey (KNBS, 2018). According to the National Hospital Insurance Fund (NHIF), only 9.6% of the County population is covered, leaving 90.4% not covered by any form of prepayment scheme. Subsequently, a high proportion of the population uses out-of-pocket payments to access health services, putting families at the risk of catastrophic and or impoverishing expenditure.

Implementation of the practice

Using OOP payment to fund health systems has several disadvantages, chief among them is that it discourages people (especially the poor) from seeking care. By focusing on the level of OOP payment, it is possible to monitor the degree to which people lack financial protection. In 2013, globally, 32% of total health expenditure came from OOP payments, down from 36% in 2000. While this is the right direction, the 2013 figure is nevertheless considered an indication that in many countries, OOP payments are still too high (below 20% of total health expenditure is usually a good indication of reduced risk of catastrophic health spending).

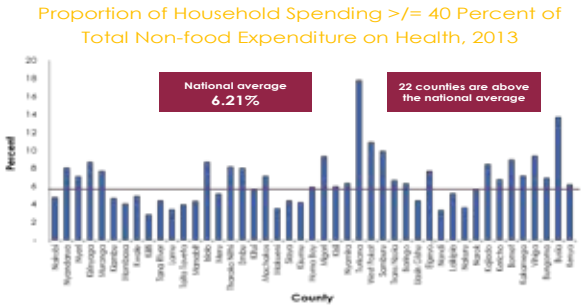


Figure 1: Proportion of household spending >/=40 percent of total non-food expenditure on health, 2013

As shown above, a significant number (4%) of Makueni citizens move to abject poverty annually as a result of health expenditure.

Given that medical services in dispensaries and health centres were already free and paid for by the National Government, the County Government figured out that if it doubled the 100 million shillings County and sub-county hospitals were collecting in user fees, it would offer free services across the board to its residents. Under the MakueniCare, the hospitals provide care and bill the County Government which also supplies them as well as the primary health care facilities with drugs, equipment, staff and continuous improvement of infrastructure.

The County Government of Makueni prioritizes health as part of its key development agenda. From the 1st of May 2016, the County Government piloted a universal health coverage program for its population aged 65 years and above. The pilot ran for six months. It was from this pilot that key lessons were learned that helped the County Government to design a population-wide UHC scheme that enables all eligible citizens of Makueni to access secondary-level care without incurring out-of-pocket expenditure at the point of care in all public hospitals within the County. The scheme runs two sub-programmes where those households headed by persons below the age of 65 pay a renewable annual registration fee of KSh 500 per household while the elderly access services without any payment. This was intended to safeguard the programme against moral hazards.

Generally, the registration happens in two ways: routine registration and mass registration. In routine registration, the hospitals act as registration centres and the registration is continuous while in mass registration sub-wards are used as registration centres.

Benefits Package

The development of the MakueniCare benefit package was guided by various national and county plans and policies, including the Kenya Health Sector Strategic and Investment Plan 2014–2018, Kenya Health Policy (2014-2030), Kenya Essential Package for Health, Makueni County Vision 2025, and the County Integrated Development Plan. The County Government also considered criteria such as cost-effectiveness, cost, burden of disease, fiscal impact etc. The benefits package includes both inpatient and outpatient services as follows:

- Inpatient services: nursing care, daily bed fee, ward consumables, drugs, daily consultations, investigations (both laboratory and radiological) and blood transfusions;
- Outpatient services: dental services3, minor operations, ambulance services from the community to County hospitals, laboratory services, occupational therapy, counselling services, physiotherapy, routine orthopedic services, pharmacy services and imaging.
- Mortuary services: eligible persons for 10 days after which standard daily charges apply. The fund, however, does not cover professional fees for autopsies/postmortems, filling of P3 forms, medical reports and other related services.

MakueniCare does not cover auxiliary devices and the cost of surgical implants, forensic services, post-mortem services and specialized services such as computerized tomography, intensive care unit services, dialysis and non-routine medical reports. Referrals outside Makueni County are not covered as well. However, the County clears the bills for the needy residents who are admitted to hospitals outside Makueni County.

This policy was developed through an evidence-based and consultative process. Under the stewardship of the County Government, an extensive consultation process with stakeholders (government ministries/agencies, multilateral and bilateral development partners, and implementing partners — faith-based, private sector, and civil society) was undertaken to gain consensus on divergent views. A comprehensive and critical analysis of the status, trends and achievement of health goals in the County was undertaken. The County Government had to allocate more than 30% of its budget to the Department

of Health to facilitate the achievement of UHC. The County plans to sustain the best practice in future by anchoring the process in law.

Results of the practice

Outputs and outcomes

- Health Outcomes: population health improved.
- Financial Protection: the burden of health care costs borne bypatients was eliminated and the workload increased.
- Quality: the quality of care improved
- Efficiency: the cost-effectiveness of health care services improved
- Equity: priority health services of good technical quality are available for all those in need, irrespective of economic, geographic, gender, ethnic, or other characteristics.
- Sustainability: the health system's financial viability has improved by ensuring

  alignment between the services covered and available financing streams and

  by lowering long-term health expenditure growth.

Activities undertaken that ultimately led to positive results

- Promoting enrollment in the MakueniCare scheme. Conducting outreach and education campaigns to inform the population about benefits package services and enrollment.
- Promoting enrollment in the National Health Insurance schemes.
- Investing in essential and specialized medical equipment and health infrastructure. Strengthening drugs, medical commodities and vaccines supply chain.
- Ringfencing financial resources for UHC.
- Optimization of resource generation from external sources, e.g. NHIF schemes
- Promotion of efficiency in the management of UHC resources.
- Financial reporting- Strengthening from the lowest administrative and service delivery units.
- Community engagement through strengthening of the establishment and capacity building of hospital boards.
- Institutionalization of quality management structures at all levels.

Lessons learnt

While the programme has been a success in expanding access and quality of care as well as cushioning citizens from catastrophic out-of-pocket expenditure, there are challenges like adverse selection for beneficiaries that exposes the scheme to the risk of non-sustainability. There is also a need to closely identify ways of increasing efficiency and risk of utilisation which are common in a situation where service fees are the main provider-payment mechanism. New users of the scheme register when they are sick and require treatment and this affects planning in the scheme. The current premium is not adequate to cater for treatment as indicated in the benefits package.

Recommendations

The programme has worked well to make healthcare services available to the people of Makueni County, though it has been faced with challenges of inadequate finances. For financial sustainability, we make the following recommendation:

- Introduce premiums (monthly, quarterly, or annual contributions from beneficiaries of the benefits package) into the coverage scheme for primary healthcare (PHC) services.
- Optimize different revenue sources
- Ring-fence health resources, e.g. NHIF reimbursements
- Increase a share of government health spending to fund PHC services
- Increased coverage of the population in prepayment schemes,
- Create costing to determine reimbursements rates
- Review of the provider purchase mechanisms

Further reading:

- Makueni County Universal Healthcare Guidelines, 2016
- The Constitution of Kenya, 2010
- The "Big Four" Agenda

CONTINUOUS QUALITY IMPROVEMENT THROUGH INTEGRATED COMMODITY SUPPORTIVE SUPERVISION AND SUPPLY CHAIN AUDIT FOR HEALTH PRODUCTS AND TECHNOLOGIES (HPTS) SYSTEM STRENGTHENING IN VIHIGA COUNTY

Introduction (Context and Challenge)

In the devolved system of government, health remains one of the heavily devolved functions that fall under the control of County Governments, and should, therefore, be planned for, implemented and monitored. Health Supply Chain management is a key component under the Health Products and Technologies (HPT) pillar; that bestows greater responsibility on health commodity managers to ensure the availability of health commodities for effective service delivery.

The health facilities in Vihiga County experienced frequent stock-outs, poor inventory management, variances in commodity data, poor accountability and storage of health commodities due to sub-optimal supply chain management practices. Multiple interventions were employed to support health facility supply chain management.

The integrated commodity supportive supervision and supply chain audit, data verification reports and facility in-charges meetings provided reliable data that was used to inform decision making for quality improvement by the sub-county and county-level management.

- Which population was affected?

The population affected included all clients seeking health services within the community served by the health facilities' (Catchment approx. 600,000) as well as the healthcare workers who required the health products as inputs and tools for delivery of quality healthcare services.

- How did the problem impact the population?

Patients often received poor quality of care due to frequent and prolonged stock-outs of HPT. There were increased referrals out of the facility thereby increasing the cost of accessing care. Care was often delayed even where urgently required, increasing patient suffering, while the purchase of HPT in the retail outlets further led to increased out-of-pocket expenditure compared to HPT within the hospital that are often fairly priced and/or subsidized. There was also decreased capacity of healthcare workers to respond effectively to patients' needs, thus reducing the effectiveness of service delivery. Clients' complaints increased due to shortages of medicines and medical supplies leading to a lack of trust in the public service delivery system.

Implementation of the practice (Solution Path)

- What were the main activities carried out?
  - ✓ The County carried out systematic integrated commodity supportive supervision and supply chain audits using a standard Excel-based scoring tool.
  - ✓ On-the-job training and mentorship were offered on-site.
  - ✓ Interventions designed to suit facilities on a case by case basis were also done.
  - ✓ Urgent support such as redistribution of HPT was offered immediately after supervision. Frequent follow-up visits to support weaker facilities.
  - ✓ Data verification exercises were conducted quarterly to review data in retrospect.
  - ✓ Facility in-charges meetings to address key areas, disseminate information and award best performance

- When and where were the activities carried out?

From July 2019, quarterly visits to all (71) public health facilities and 4 faith-based health facilities across the 5 sub-counties (Emuhaya, Luanda, Vihiga, Luanda and Hamisi) were carried out. This was implemented through 100% coverage with each facility being visited at least once biannually.

The annual award event held at County level graced by H.E. the Governor: 1st event was held on 10th August 2020 at Mukuli Salvation Army Church (Mbale) while the 2nd event was held on 19th August 2021 at Sosa Cottages (Hamisi). The supervision visits are ongoing/routine.

- Who were the key implementers and collaborators and what were their roles?

The implementers included the County health management team members, and the Sub-county health management teams, with support from USAID Afya Ugavi Activity.

USAID Afya Ugavi provided invaluable financial and technical support in the process, including capacity building. Specifically, Afya Ugavi supported in the following areas:

- ✓ Capacity building of Sub-county and County health managers in supply chain management;
- ✓ Redistribution of commodities from health facilities with low demand to facilities with higher demand to ensure effective utilization and prevent expiries;

- ✓ Supported in development of the supervision and data collection checklists and printing and photocopies;
- ✓ Printing and photocopying of job aids;
- ✓ Supported facility in-charges meetings;
- ✓ Annual award event;
- ✓ Quantification of health products; and
- ✓ Logistical support in terms of lunch and transport reimbursement for supervision visits.

Another collaborating partner was USAID Ampath Plus that provided some wall thermometers for drug stores, temperature monitoring as well as logistical support and trophies for the annual award event. The County Government of Vihiga was instrumental in providing leadership, logistical support for redistribution of health products and also supporting the annual award event. In the award event, the Governor graced the occasion and the County Government provided the venue and financial support for cash awards and honoraria for guests.

The Kenya Medical Supplies Agency (KEMSA) provided 450 wooden pallets to improve the storage of health products in the stores.

The County Health Management Teams (CHMT) and the Sub-County Health Management Teams (SCHMT) implemented the interventions and conducted supportive supervision activities within the health facilities. This included the on-the-job trainings, mentorship and supervision. The team leads for the activity were drawn from the pharmacy section comprising the County Pharmacist and sub-county pharmacists who ensured quality assurance of the activities implemented. In compliance with COVID-19 containment measures, teams comprised 2–3 officers visiting 1 health facility per day for comprehensive mentorship and on-the-job training at the service delivery points.

- What were the resource implications?

The 100% coverage of all 71 County health facilities through Integrated Commodity Supportive Supervision and Supply Chain Audit twice a year cost a total of KSh 650,000; Biannual Commodity Data Verification Exercise Costs KSh 620,000 per year; Quarterly Facility in-charges meetings cost KSh 510,000 for 3 sessions and the annual award event cost KSh 800,000. Each officer was reimbursed KSh 1,000 for lunch and KSh 500 transport (within their sub-county). A transport reimbursement of KSh 1,000 was applied if the activity was outside the officers' sub-county while hard-to-reach areas had an improved rate of up to KSh 1,500 per day.

- How does the County plan to sustain the best practice in future?

Through the newly established Health Products and Technologies Unit (HPTU), the County plans to continue conducting integrated commodity support supervision and supply chain audit, facility-based data verification exercises, on-the-job training, mentorship and awarding best performance. The HPTU team comprises 10 members at the County level; each representing an area of focus. A team of 6 champions have been mentored at the county level which assures the quality of the supervision exercise with fidelity. Within the sub-counties, the County Health Department works closely with the sub-county pharmacists and malaria coordinators in this initiative. USAID Afya Ugavi has been supporting most of the activities from 2016 to date while the County Government supports them whenever necessary. Negotiations with the County to allocate resources to the HPT Unit are ongoing, especially because the Unit does not have a vote.

Results of the practice (outputs and outcomes)

1. Health workers' capacity is built on good commodity management practices.
2. Positive attitude of supply chain focal persons and managers of health facilities.
3. Improved data quality with 100% reporting rates for most /health commodities.
4. Better practices in commodity management from an average of 58% to 70%.

Priority areas assessed	Q2 2020	Q3 2020	Q4 2020	Q3 2021	Q4 2021
Accountability for commodities	53	68	70	57	71
Availability & Use of commodity MIS tools	86	89	83	83	91
Guidelines and Job aids	36	62	64	58	58
Inventory Management	43	53	57	50	55
Resolution of previous action points	61	50	47	58	46
Storage of health products	63	73	56	78	77
Verification of commodity data	80	75	79	86	82
Total Score	58	65	66	66	70

Table 1: Vihiga County Supportive Supervision Performance Scores (%) FY 2020/2021

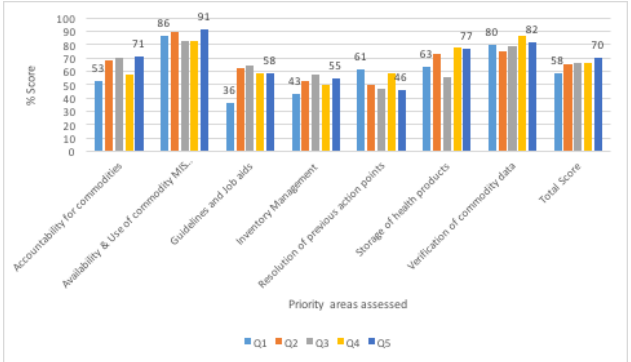


Figure 2: Performance scores per quarter as at the end of June 2021

1. Overall county performance in malaria supply chain indicators improved among the 8 lake endemic counties from (position 8) in 2016 and position 3 in 2020. (See Annex 2)

- Which key activities undertaken ultimately led to which positive or negative results?

2. Capacity building of health workers through on-the-job training and mentorship during supervision and facility in-charges' forum were very critical.
3. Significant improvements in most areas of HPTs management were also motivated by the annual award event.
4. Urgent redistribution of commodities to needy facilities created proactiveness and ownership of data among facility managers. The County Health Management Team members were resourceful in active mop-up and redistribution exercises. The County Government provided means of transport.

Lessons learnt

- What worked really well – what facilitated this?

1. Use of a non-authoritative but firm voice in guiding and solving facilities' problems.
2. Immediate fixing of issues within reach.
3. Small teams work satisfactorily (a pair per facility per day)
4. Acknowledging and awarding performance in every small way possible, e.g., the Award Ceremony was a key motivator for continuous performance improvement.
5. Cost-sharing of events between County Government and partners in health is very important for sustainability. This strengthened the collaboration and a shared commitment which makes the journey towards sustainability following the withdrawal of partners' support easier.

- What did not work – why did it not work?

Sending bigger teams on the ground led to increased overall costs, time wastage, transport challenges and crowding of facilities with little output per head.

- What would you do differently? What would you do in the same way?

1. Formation of smaller teams for efficiency and increased coverage.
3. Capacity-build more personnel at middle-level management.
3. Source for vehicles to drop multiple teams in hard-to-reach terrain areas.

Recommendations (Conclusion)

- What are the most important conclusions and recommendations from the experience? What would you advise other sectors seeking to replicate the model?

1. Structured visits to service delivery points are a key factor in CQI.
2. Use of scored checklists helps monitor progress.
3. Designing and implementing interventions on-site facilitates low-cost but high-impact interventions.
4. Cost-sharing model of financing between County Government and partners could be a solution to implementing activities in our resource-limited settings.

- What would you recommend others to do when facing similar challenges?

1. Schedule visits periodically to service delivery points for system strengthening.
2. Support the service entities on a case by case model other than generalization.
3. Analyze data collected and give feedback to the service points
4. Acknowledge and award the best and improved facilities.

- What would you avoid?

- Use of authoritative language and tone in addressing gaps at the health facility level.

- Working alone – teamwork yields much coverage for Vihiga County Supply chain activities.

10th August 2020 Facility In-charges Meeting and Award Event Photos

From Right: Area MCA, H.E. Governor Dr Wilber Ottichilo, Former CEC-M Health, Chair Health Committee (CA) appreciating mention of progress in accountability of health commodities (10th August 2020)

H.E. Governor Dr. Wilber Ottichilo going through the list of facilities to be awarded for supply chain indicators and HIV patient retention rate (10th August 2020)

H.E. Governor Dr Wilber Ottichilo handing a trophy to Mbale Rural Health Centre as the overall best facility (2020) in Supply Chain Indicators (10th August 2020)

H.E. Governor Dr Wilber Ottichilo handing a trophy to Luanda Sub-county MOH for the best county in Supply Chain Indicators (10th August 2020)

H.E. Governor Dr Wilber Ottichilo and former CEC-M Health keenly following the event's proceedings (10th August 2020)

Hon. Manoah Mboku, Chair of Health Committee (CA) presenting a trophy to the Medical Superintendent of Vihiga County Referral Hospital for emerging best among hospitals) (10th August 2020)

H.E. Governor Dr Wilber Ottichilo, Addressing the facility in-charges and guests during the event on 10th August 2020)0/08/2020

H.E. addressing the facility In-charges and guests in Mukuli Salvation Army Church in Mbale on 10th August 2020

9th August 2021 Facility In-charges Meeting and Award Event Photos

Cheptulu Dispensary In-charge receiving a trophy from the County Assembly Health Committee Chair on 19th August 2021

Nadanya Dispensary In-charge receiving a trophy from the CPSB Vice-Chair on 19th August 2021

On the left, H.E. the Governor and other dignitaries during the event on 19th August 2021. On the right, Kisiru Dispensary In-charge receiving a trophy from the Health CECM, Prof. Inonda Mwanje, as the best facility in supply.

On the left, Vihiga County Referral Hospital Medical Superintendent receiving a trophy from USAID Chief of Party, USAID Afya Ugavi. On the right, H.E. the Governor delivering his speech during the Awards ceremony

County Director of Health Issuing a trophy to Ebwiranyi Dispensary In-charge on 19th August 2021

Trophies before awarding ceremony

Chief Officer Health issuing a trophy to the Chavogere Dispensary In-charge on 19th August 2021

Facility In-charges and other guests during the event

SECTOR: GENDER AND SOCIAL SERVICES

NYAMIRA COUNTY PROVIDES FREE MEDICAL INSURANCE TO VULNERABLE FAMILIES

The County Government of Nyamira started a health insurance registration exercise that benefited more than 15,000 residents who cannot afford medical cover. The exercise which took place at Nyamaiya Health Centre in Nyamaiya Ward was a joint partnership between the County Government and National Hospital Insurance Fund (NHIF) to prioritize health services and provide medical cover for vulnerable families in the County.

An NHIF Officer registering residents

The targeted needy families from different sub-counties in Nyamira got free health cover from the County Government after submitting the details for registration to the selected centres. This strategy is aimed at ensuring that all households have medical cover and that the intervention will encourage older people to get frequent check-ups for most illnesses connected to old age. Free medical services provided by the medical cover are also expected to ensure that both expectant mothers and newborns get the needed services during, before and after birth. Residents from other households who could afford their personal health cover were not eligible for this free insurance. However, the County Government continues to encourage all households to acquire cheaper medical insurance in order to increase health outcomes in the County.

PIONEERING GENDER-RESPONSIVE COVID-19 ISOLATION CENTRES: CASE STUDY OF MIGORI COUNTY, KENYA

Purpose of the Case Study

At the onset of the COVID-19 pandemic when Kenya's first case was reported on 13th March 2020, Migori County did not have a single facility dedicated to managing infectious diseases. The County was classified among the 14 hotspot Counties due to its cross-border location, with porous borders and a major road network connecting Kenya and Tanzania via the Isebania border.

The objective of this case study was to illustrate the steps taken by Migori County in setting up and managing gender-responsive isolation and treatment centres, as part of its overall response approach towards managing and containing COVID-19. The COVID-19 response measures adopted at the isolation and treatment centres responded to the needs of male patients, female patients, male and female prisoners and remandees, expectant and lactating mothers as well as children.

The purpose was to provide other Counties and subnational governments globally with an opportunity to learn from the experiences and lessons of Migori County, and replicate what could apply in their context to improve their COVID-19 response approaches, and in combating future pandemics.

Context and Challenge

COVID-19 is an acute viral pneumonia caused by the coronavirus. The causative agent, coronavirus has nearly 80% homological resemblance with that which was responsible for past outbreaks such as Middle East Respiratory Syndrome, (MERS-CoV) and Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV), thus earning it the name SARS n CoV-2.

SARS-CoV-2 is the strain of coronavirus that causes coronavirus disease 2019 (COVID-19), the respiratory illness responsible for the COVID-19 pandemic. It emerged from China, Wuhan Province in December 2019 and was declared a pandemic outbreak by World Health Organization (WHO) on 11th March 2020. The virus is classified under especially dangerous pathogens with the potential of spreading via contact, airborne and droplets.

Kenya's first case was reported on 13th March 2020. In preparation for this pandemic, the national COVID-19 Rapid Response Team classified Migori County among the 14 hotspot Counties due to its cross-border geographical location, with porous borders and a major road network connecting Kenya and Tanzania via the Isebania border.

Low income and middle-income countries have weak health systems and so such countries, including Kenya, are ill-prepared to respond to pandemics. This was the scenario in Migori County where there was no single dedicated hospital to handle such outbreaks.

WHO adopted the general principle of management of infectious diseases through case identification and isolation. This involved enhanced surveillance both in the community and health facilities. Migori County had local guidelines for surveillance, quarantine, screening, testing and case management.

Consequently, the County Government swiftly converted Macalder Sub-County Hospital into a treatment centre with each sub-county having a holding area for suspected cases awaiting COVID-19 results before evacuation to the treatment centres. At the treatment centre, 33 beds were initially allocated, with 13 for males, 8 beds designated for females, 8 for pregnant, lactating mothers and paediatrics and 4 beds for prisoners (before the creation of the treatment centre in the prison).

The County recorded its first confirmed COVID-19 cases on 2nd May 2020 following enhanced surveillance, especially along the vast Kenya–Tanzania border that spans 4 Sub-counties with several unofficial border crossing points.

The first two confirmed cases were a 22-year-old gravid female in her first trimester and a 16-month old baby who had to be admitted with his COVID-19 negative mother. The next confirmed cases were then a mix of different gender and age groups, with men being most infected compared to women at a ratio of 5:1, while the most affected age group was aged between 25–35 years. Healthcare workers, police officers, customs officials and other personnel at the fore of the fight against COVID-19 were also infected and soon afterwards, an increasing number of prisoners contracted COVID-19 from the police cells and prisons. By the end of July, Migori had recorded 298 confirmed COVID-19 cases with a positivity rate of 5.5%, tallying with what was projected then. The prison infection rate at that time was 28.7% with an attack rate of 30.1%. This was recorded from a total of 230 admitted to the isolation centres, 132 in Macalder COVID-19 treatment centre and 98 at the Migori GK Prison.

Majority of those infected were males and their numbers outstretched the available space for the male gender, thereby making cohosting by gender a big challenge. This resulted in reported cases of re-infection thus increasing the number of days one spent in the isolation centres. Unfortunately, this situation compelled the County Health Team to allocate male patients a room that was close to the female ward. Similarly, the 4 beds that were allocated for inmates were full, with more inmates testing positive in the main prison. Due to security considerations, the Department of Health decided to set up a treatment centre within the Migori GK Prison.

With time, the Health County Team observed that majority of offenders were males, and thus more men continued to register more COVID-19 positive cases compared to women. For this reason, the Department overlooked the need to set up a female wing in the Prison Treatment Centre. This became a real challenge when one female remandee tested positive in one of the police cells and therefore had to be isolated and treated.

Response and Actions (to address the challenge)

Against the foregoing context, the Migori County Department of Health- took the following steps as part of the COVID-19 response measures:

Step 1: Formation of COVID-19 Coordination teams

At the County level, the Health Department formed three teams to respond to COVID-19 cases. The teams included Case Management Team, Logistics Team and Surveillance Team. The Treatment Team was tasked to evacuate patients who turned positive and also manage the therapeutic part of the patient.

Meanwhile, a COVID-19 Response team was established at the County and Sub-county levels to oversee and guide COVID-19 management. The teams were interconnected, and convened regular meetings to monitor progress.

Step 2: Converting Macalder Sub-county Hospital into a COVID-19 Hospital

As already mentioned, the County did not have a pre-existing dedicated infectious disease hospital. Macalder Sub-county Hospital in Nyatike Sub-county was converted into a COVID-19 hospital since it fit the infrastructural requirements for setting up an isolation centre in line with the set national guidelines, and also had vast land for possible expansion. A treatment team was then put in place and posted to the treatment centre immediately Kenya recorded its first COVID-19 case in March 2020. Between March 2020 and May 2020 when Migori recorded its first case, the treatment team had been adequately trained and conducted weekly drills at the treatment centre. The drills helped foresee gaps and address them prior to the first admissions. This included defining the patient flow, dedicating different sections and installing appropriate Infection Prevention and Control (IPC) measures.

Step 3: Expansion of bed capacity of Macalder COVID-19 Hospital and enhancing gender responsiveness of COVID-19 treatment and care.

The sections within the treatment centre initially comprised 24 beds: female section (10 beds), male section (10 beds), and pregnant mothers and pediatric section (4 beds). However, due to the increasing number of cases requiring admission, and in compliance with the Presidential directive to expand county COVID-19

bed capacities to a minimum of 300, the bed capacity of Macalder was expanded to 203 beds: male section (108 beds), female section (64 beds), pregnant mothers/ pediatric section (11 beds), recovery section (13), and health care workers section (7 beds). However, the infrastructure at Macalder in terms of wards could not accommodate these beds and patients. The County Government, therefore, bought two tents, one for female and one for male patients. This helped in accommodating the increased numbers of COVID-19 patients, while at the same time ensuring that the facility was observing COVID-19 containment measures.

Step 4: Deployment of psychosocial support specialists

Overall, most patients in the COVID-19 isolation and treatment centres experienced a deep sense of exclusion due to being kept away from their families, without the option of being visited by family and friends. The County deployed psychosocial counsellors who provided counselling services to the patients so that they do not feel excluded, and reassured them of their healing and prepared them to rejoin their families.

Step 5: Establishment of a COVID-19 Treatment Centre at the Migori GK Prison.

Initial COVID-19 cases from the prisons and police cells were admitted to the Macalder treatment centre. This posed a security challenge necessitating the establishment of a treatment centre within the Migori GK Prison. For this to work, a meeting was held with the Judiciary Department, Head of Prisoners, Police Commander and the Health Department.

Considering the prevailing realities, after the meeting by stakeholders, the Migori GK Prison treatment centre was dedicated to serving COVID-19 positive male inmates, while all women inmates were transferred to Rongo Prison. Most of the office spaces and rooms at the Migori the G.K Prison were then converted to treatment rooms and holding areas. Healthcare workers were deployed at the prison's isolation centre to help in observing the patient recovery process. However, female remandees and prisoners who turned positive from other security and correctional facilities were still being admitted to the Macalder treatment centre due to challenges in setting up a gender-sensitive section at the prison.

Step 6: Special provision to minimize risks for COVID-19 healthcare workers

Healthcare workers are very key in the fight against the COVID-19 pandemic and when they contract the disease in the line of duty, it is the responsibility of the employer to provide optimal care for them to regain their health. It is against this premise that the County Government dedicated a separate room at the Macalder Sub-county Hospital to accommodate healthcare workers who turned positive. A holding area was also rented that acted as a quarantine facility for the healthcare workers at the treatment area where after their shift, the healthcare teams first got admitted to the holding area for observation before rejoining their families.

Outcomes and Results

With the above actions (containment measures), Migori County experienced the following results:

1. Even with an increased testing sample size, there was a drop in the numbers of positive cases both at the G.K Prison and the County at large. The positivity rate at the prisons treatment centre dropped from 28.7% at the beginning of July to 8.1% as of the end of August 2020. The County at large also experienced a drop in positivity rate from 10% at week one (start of May 2020) to 3% at week 16 (end of August 2020).
2. Placing the patients in cohorts within different sections helped in reducing the average length of stay at the treatment facility from 18days to 10days.
3. The stigma of healthcare workers who turned positive also reduced because of the optimal care given to them during treatment.
4. Having the above structural framework, particularly segregation according to gender, was a deliberate effort towards the provision of social protection. Migori County's treatment centre, being gender-responsive successfully managed to mitigate exposure to social risks during patients' stay in the isolation centre that have disproportionate negative impacts on women and girls.
5. Gender-responsiveness at the treatment centre further enabled healthcare workers to attend to specific gender needs of patients throughout their admission period, including persons with disabilities, who are often excluded from essential services. These needs continue regardless of whether people are affected by COVID-19 or not.

Lessons Learnt

1. Pre-COVID-19, Migori County did not have a facility for handling infectious diseases in place. If such facilities existed prior to the onset of COVID-19, the pandemic would have been easily managed without the rush.
2. At the onset of the COVID-19 pandemic, inmates who turned positive for COVID-19 at the Migori GK Prison were male. This led the County COVID-19 Response team to assume that it would be very unlikely to have COVID-19 positive female prisoners. For this reason, this assumption failed the test and led to the failure by the County team to plan for gender mainstreaming at the GK Prison,

which was a big blow to the County's COVID-19 response strategy. Counties should avoid such misguided assumptions.

3. Consultation and collaboration between the County Government of Migori and national government structures within the County proved to be a critical pillar in effective response to the COVID-19 pandemic.

4. It is important to plan for and provide targeted COVID-19 care by separating men, women, expectant mothers and children, and minimising security risks by separating convicted patients from the general public.

5. Ensuring 24hr security surveillance to minimize any risk of rape and sexual abuse within COVID-19 isolation and treatment centres is critical. This will also support enforcement of COVID-19 containment measures within the facilities, and alleviate the need for repeat tests emerging from non-adherence to prescribed protocols.

Recommendations [what can other Counties learn?]

1. All other Counties should consider gender sensitivity in handling their patients. Male and female patients should be completely separated even during emergencies.

2. All Counties should convert the COVID-19 isolation and treatment centres into centres dedicated to treating infectious diseases, preferably one per Sub-county at the minimum. Counties should also invest in hiring and training personnel to handle infectious diseases and public healthcare in general.

3. Counties should interrogate their assumptions when designing emergency response measures.

4. Counties should plan for emergency response in their County Integrated Development Plans (CIDPs) and Annual Development Plans (ADPs), and allocate adequate resources. In this regard, modalities for the financing of pandemics should be clearly outlined to ensure that Counties do not get stuck on how to finance critical services, including feeding patients in quarantine, isolation and treatment centres, as well as remunerating security personnel in those centres.

5. County Governments and national government structures within respective Counties should collaborate in setting up frameworks for implementing protocols for containing pandemics and emergencies within prisons to minimize the spread of infectious diseases. Such collaboration should be extended to other public institutions and other types of emergencies.

Photo Gallery

Macalder Sub-county COVID-19 Treatment Centre

The treatment area tent facility innovation to accommodate more patients

Migori GK Prison Women Wing that has been converted to a treatment centre

Migori County COVID-19 Response team in a planning meeting

SECTOR: EDUCATION

EARLY CHILDHOOD DEVELOPMENT CENTRES IN MOMBASA TO OFFER LESSONS IN ROBOTICS AND ARTIFICIAL INTELLIGENCE (AI)

Over 11,200 nursery school learners in Mombasa County will receive lessons in Robotics and Artificial Intelligence (AI). Robotics and AI is a subject that involves the development of systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from experience. The County Government of Mombasa, which is the first to introduce this system in Kenya, aims to create a society where learners are encouraged to be innovators.

The first phase was earmarked to benefit the 98 public learning facilities in the County and later extend to more than 200 privately-owned schools. This being new in Kenyan public schools, the County invested in experts from Singapore who trained 12 teachers. The 12 qualified teachers taught learners in Longo, Kadzandani and Utange Kwa Jomvu on subjects like coding.

With the need to develop a syllabus and make the lessons available to all Early Childhood Development Education (ECDE) Centres, the County set aside KSh15 million as part of the County's education budget towards this project. The move to start with public schools aimed to encourage parents in the County to try free public schools. Though some parents could not understand the importance of these studies, the majority supported them and were looking forward to the development of the syllabus.

Some of the learners in a Robotics and AI lesson

Mombasa Governor, H.E. Ali Hassan Joho trying out the equipment with the learners

CONSTRUCTING AND EQUIPPING ECDE CENTRES WITH SUITABLE FURNITURE TO ENHANCE A CHILD-FRIENDLY LEARNING ENVIRONMENT IN KAKAMEGA COUNTY

Introduction

Context and challenge

The Early Childhood Development Education (ECDE) sub-sector has for years been neglected by the government, leaving parents to bear the burden of paying ECDE teachers and providing learners with learning materials and running a school feeding programme. With the Constitution 2010, ECDE was devolved and some Counties embarked on revamping the sub-sector by ensuring quality learning facilities, with properly ventilated classrooms, safe clean water, kitchens, as well as furniture and toilets suitable for children, and age-appropriate learning materials.

In Kakamega County, the number of ECDE centres before devolution paled at 882 compared to the number of learners eligible for ECDE. The existing ECDE Centres were not only inadequate and far apart, but they were also substandard, lacking essential physical facilities such as toilets for the ECDE boys and girls. The teacher-learner ratio was also higher than the international (1:25), national (1:40) standards. The teacher-learner ratio in the County was 1:50 because of the high population (117,442) of ECDE learners and socio-economic reasons. County ratios vary because of affordability. Most learners lacked books and toys to play with and had to walk long distances to the ECDE centres on an empty stomach, pointing to the need for more centres to be built and for the establishment of feeding programmes.

The affected population

The affected population included the ECDE-going learners and their parents, ECDE teachers and the County ECDE management in the 60 Wards within twelve (12) Sub-counties in Kakamega County.

Impact of the problem on the population:

The problem of substandard and inadequate learning facilities (environment and resources; having few teachers and learning materials) affected quality learning and teacher motivation. It also affected enrolment, retention rate and completion rate. For example, in 2013, the ECDE enrolment was 8437.

Implementation of the practice (Solution Path)

The main activities carried out:

- After the construction of new classrooms, there was a need to equip them. The figure was calculated based on the needs and target number of centres to be reached.
- The County ECDE Committee allocated the tables and chairs proportionately to all the newly constructed and existing ECDE Centres in the County.
- A total of 334 centres were given learner-friendly (sturdy, appropriate size/height and of different bright colours) tables and chairs.
- Each ECDE Centre was being equipped with 2 classrooms (for PP1 and PP2; each with a store), an office for the ECDE teachers, and a modern pit latrine each for the boys and the girls. The classrooms were fitted with a learner-friendly ceiling, tables and chairs, a terrazzo floor and a 10,000-litre water tank to harvest rainwater for use by the learners.
- The County was establishing ECDE Centres in all the primary schools to enhance accessibility by shortening the distance learners have to walk/travel to an ECDE centre. The number then stood at 905 centres.

When and where the activities were carried out:

The activities were carried out in the ECDE centres in Kakamega County.

The key implementers and collaborators and their roles:

The implementation team was chaired by the County Director of ECDE, and it included Sub-county ECDE Programme Officers who are specialists in ECDE and the ECDE Boards of Management.

Resource implications

- The County Government allocated KSh 50 million annually for phased implementation of furniture purchases.
- The implementing team benchmarked the feeding programme in Homabay County that had successfully improved ECDE learning.

How the County plans to sustain the best practice:

- The County has budgeted for KSh 50 million annually for ECDE furniture.
- The County will seek to empower the youth to make and supply quality, age-appropriate furniture per schedule.
- The County is buying quality durable furniture that is value for money and will last longer.
- The County continues to sensitise parents on what 'free education' entails, and the need for them

to partner with the County on the provision of adequate learning materials suitable for learners and in the school feeding programme. In the meantime, the County Government fully caters for the school fees and no learner is sent away from school for non-payment.

Results of the practice (outputs and outcomes)

- Purchase of furniture from the allocated KSh 50 million for ECDE centres.
- ECDE enrolment increased from 112,000 to 117,442 after the furniture distribution initiative.
- In the 2019/2020 Financial Year, each ECDE centre got 66 chairs and 10 tables. A table sits eight (8) learners and is spacious enough to allow for the demonstration of concepts. Currently, there are nine hundred and five (905) ECDE centres, most of them attached to primary schools.
- Each child gets free textbooks and exercise books (up to 7) according to the number of strands/ subjects they learn. The County provides a KSh 1,000 vote head per child.
- Besides providing tables and chairs, the County Government of Kakamega has constructed modern classrooms, offices and stores in 267 ECDE centres translating to a total of 534 classrooms. The County is constructing ECDE centres, one or more in each Ward per Financial Year depending on the availability of funds.
- A few ECDE centres were started in dilapidated classrooms that were donated by the primary schools. These required repair and maintenance, and consequently, the County Government allocated KSh 10 million for repair and maintenance in the 2020/2021 Financial Year.
- World Vision constructed modern ECDE classrooms in 18 ECDE centres with some having double classes and others with triple classes, translating to 42 classrooms.
- The County will soon start a feeding programme in ECDE centres and will pilot it in one (1) school in each of the 60 Wards.

Key activities that were undertaken that ultimately led to positive results:

- Teamwork within the County ECDE Section.
- Involvement of ECDE professionals and other key stakeholders in decision making.
- Allocation of capitation funds to ECDE learners.
- Capitation for ECDE furniture meant funds could not be diverted. An MoU was signed with the Kenya Literature Bureau (KLB) to provide branded reading and writing materials at subsidised prices before payment. The materials are also branded NOT FOR SALE, which means they cannot be diverted to non-County institutions. Additionally, they train teachers on the Competency-based Curriculum (CBC).

Lessons learnt

- The County ECDE Committee is very vibrant and has successfully advocated for the allocation of funds to the ECDE section.
- An empowered Board of Management (BOM) delivers on its mandate. The Kakamega County ECDE BOMs are in charge of their capitation which is directly sent to individual ECDE centres. Each BoM also works as a unit, assisting in the sensitisation of parents to enrol their age-appropriate children in ECDE centres.
- Each school has been assigned a code, and the furniture is distributed to the schools already branded with the County name, school name and code. This way, each ECDE centre receives its due allocation.
- Partnerships with institutions like KLB ensures the supply of teaching and learning materials (textbooks and exercise books) is not affected by delays in financial disbursements, as they supply first and get paid later.
- Construction of modern classrooms has attracted more ECDE learners and made the working environment conducive for ECDE teachers.
- The County bought quality chairs that 'can even withstand the weight of an adult' and will thus last longer.
- Purchase of multi-coloured chairs and tables has excited learners, thus motivating them to learn.
- The tables can be disassembled and moved easily.

What did not work and why it did not work

- Parents did not co-fund ECDE education as expected because most parents understand free basic education to mean the government caters 100% for the teaching and learning materials as well as physical facilities and remuneration of teachers. Also, for learner exposure, i.e. educational trips/tours.
- The BOMs were sensitised and were in turn expected to sensitise parents on their role and buy-in. A few parents understood and were willing to partner with the County. There is a need to innovatively sensitise the parents for their buy-in.

What we would do differently and what we would do in the same way:

- There is a need to further sensitise and engage parents in decision making at the initial stages. Hopefully, they will support the County in the provision of essentials like school uniforms and educational tours' sustenance after seeing what has already been achieved.
- Purchasing furniture locally from the local polytechnics will bring the cost down and support livelihoods.
- More capitation is given to centres with high numbers. For example, the ECDE at Kakamega Primary School has seven (7) streams, meaning they require more furniture, learning facilities and materials.

Recommendations

What other counties/sectors seeking to replicate the model can learn:

- ECDE centres should have empowered BOMs to ensure the proper running of ECDE centres.
- Parents should contribute, especially on educational tours to expose their children. There is a need to capacity-build BOMs for them to help sensitise parents accordingly.
- Counties should look for partnerships with non-governmental agencies like UNICEF, World Vision and others, which are essential in ensuring the uninterrupted and subsidised supply of essential requirements and in the capacity building of teachers on the Competency-based Curriculum (CBC).
- Collaboration with the National Government in policies and operations is key.

What to do when facing similar challenges:

- Avoid politicising the initiatives; ignore those who politicise the initiative and use the agreed criteria to implement the initiative proportionately.
- County governments should enhance capitation and standardise the ECDE sub-sector which is their primary mandate in all counties.
- Ward and Sub-county ECDE offices should be managed by ECDE-trained Programme Officers (POs). Currently, Kakamega County has 12 POs in its 12 Sub-counties and 24 others are to be engaged at the Ward level.
- Accessible, reliable (credible and of good quality) data on ECDE learners will help counties to plan better to offer quality services. Counties should invest in biometric registration of ECDE learners.
- The Council of Governors (COG) should support counties to attract partners in the ECDE sector.

What to avoid:

- Successful implementation of this kind of project should be devoid of political interference or interests. Parents expect the Governor, a politician, to provide free ECDE, a notion that increases the burden of ECDE provision on the County.

Three ECDE classrooms, two stores and an office at Maraba ECDE Centre, Lurambi Sub-county, Kakamega County

Two ECDE classrooms, two stores and an office at Madala ECDE Centre, Shinyalu Sub-county, Kakamega County

Two ECDE classrooms, two stores and an Office done by World Vision

Two ECDE classrooms, two stores and an Office done by World Vision

ECDE furniture provided by the County Government of Kakamega.

Learners sampling the ECDE furniture provided by the County Government of Kakamega

SECTOR: WATER, FORESTRY, ENVIRONMENT AND CLIMATE CHANGE

IMPLEMENTING THE KWA MBILA EARTH DAM TO IMPROVE ACCESS TO WATER FOR WATER-SCARCE KATHONZWENI AND KITISE/KITHUKI WARDS

Introduction (Context and Challenge)

Makueni County is an arid and semi-arid land that hardly receives sufficient rainfall and is therefore drought-prone and water-scarce. Most of the populations depend on surface and subsurface dams for water, which rarely hold sufficient water because of high evaporation rates during the dry seasons. Natural water sources can only meet about 45% of the County's water needs. Athi River and Kibwezi River are the only permanent rivers serving the entire County. Residents often trek for long distances in search of water for domestic, livestock use and irrigation. For example, residents of Kwa Mbila in Kathonzweni Ward would take up to 5 hours to go to Athi River 36 km away or 2 hours to Kiangini River some 10 km away to get water. The residents often faced hunger during long dry periods and flash-flooding.

Implementation of the Practice (Solution Path)

- Kathonzweni residents like most others in the drought-prone County prioritised water projects through an effective public participation process. They identified the revival of the Kwa Mbila Dam which had been proposed in 1976 but was not implemented due to lack of funds. The Community had given the land for the dam. Implementing the dam was done in 2015.

- To ensure collective responsibility for the rapid rollout of water access projects to mitigate water scarcity in Makueni County, all sectors in the Makueni Government have a water component in their activities in an initiative dubbed Kutwiikanya Kiw'u (holistic water harvesting).

- The community independently selected 3 dam management committees to ensure scale-up decision-making, implementation, monitoring and evaluation:
    - Area Development Committee
    - Cluster Development Committee
    - Sub-ward Development Committee

Resource implications

- Kathonzweni residents together with the County Government implemented Kwa Mbila Dam at a cost of KSh 7 million (cost-shared with the community) in 2015. The construction of the dam was undertaken using the County's machinery and the resources allocated were used to fuel the machinery. All through the project, community members were involved in tracking the usage of resources and ensuring quality control.

- The project has been funded an additional KSh 20 million in a phased approach, for distribution of the water to Kathonzweni and Kitise Kithuki Wards; targeting 29 villages.

Sustainability

- Two (2) rivers are connected to the dam. The rivers get rainwater which overflows into the dam. This ensures the dam water levels are consistently high even during the dry season.

- Plans are underway to expand the dam; the PMC is negotiating a budget allocation.

- A bank account has been opened for the dam where money accrued from the sale of water is deposited.

- During the AGM, the total collection is presented to the community. Monthly reports are also submitted to the Sub-ward Administrator.

- The PMC Chair is required to deposit his/her title deed and an assurity and in case of money mismanagement, the PMC Chair could lose his/her land title deed. This is a decision made by the community.

- Maintenance of the dam includes dredging and checking the dam intake pipes to remove any silt.

- Kathonzweni Ward shares the dam water with the neighbouring Kitise/Kithuki Ward in a cost-sharing arrangement where the water is sold to them at a fee.

- The County also has in place Project Sustainability Committees which take over from the PMCs once the project is complete.

Results of the Practice (outputs and outcomes)

- With a successful public participation process in Makueni County, residents prioritised the provision of water.

- In 2017/18, the County Government funded the construction of water kiosks, pipeline installation and pumping system for water distribution.
- In FY 2018/19, the project was funded for distribution targeting residents in Kitise/Kithuki ward. A masonry tank and water kiosks were constructed and a pipeline installed.
- In FY 2019/20 a 100,000-litre elevated tank and pipeline were installed.
- In FY 2020/21, the project was funded for further distribution. Two (2) additional water kiosks would be constructed and 10,000-litre water tanks installed at the kiosks.
- For a small fee, 2 secondary schools and 45 households have been connected to piped water from the dam, while about 200 others draw water from water kiosks connected to the dam. Other households get dam water from water points in their villages. Applying for water connection costs KSh 11,500. Farmers using the dam water for irrigation pay KSh 250 per month while water bowsers pay KSh 500 KSh 1,000 depending on capacity. The revenue collected is used to buy diesel for the pumping machines, support expansion of the piping network and caretaker costs.
- Other facilities within the dam include a generator to pump the water to households and the kiosks, a flourishing tree nursery whose seedlings are sold to members of the community for added income and a toilet 15ft deep constructed at KSh 95,274 for convenience.
- The implementation of the Kwa Mbila Earth Dam/ Water Project has improved access to water for domestic use and irrigation in the water-scarce County. Households now save time and engage in other activities, including owning kitchen gardens.
- Sensitisation of the community in getting involved in community projects as the County funds are their funds, and County staff are there to serve them. Makueni County residents are well-informed and no longer need incentives to attend meetings or take part in project activities.
- Public participation — involvement of the community in identifying the project, planning together and cost-sharing in its implementation led to 100% buy-in and ownership. In the beginning, citizens wanted the County to shoulder 100% of the cost of reviving the dam due to the impression that the County has money. After sensitisation, they agreed to a cost-sharing arrangement.
- PMCs have to certify work done before contractors are paid. They thus monitor every stage of the project continuously as they point out problems that have to be resolved to their satisfaction before the contractor is paid. For example, when contractors hand over completed works, citizens and officers take 6 months to observe them for any defects, e.g. leakages or cracks, before authorising retention payment, thus assuring quality work and value for money.
- All Ward-level projects are continuously reviewed to determine sustainability.

Lessons Learnt

- Involving citizens in project planning, implementation and monitoring enhances ownership of the project. Civic education is very key in empowering the citizens and is a win for the County since empowered citizens can own County projects and run with them. It is key for the County to sensitize communities for their buy-in through an effective public participation process to guarantee the sustainability of projects beyond the County Administration.
- Public participation. Residents ensure they run and monitor the project daily through the PMC. Villagers are alert, and they know it is their money. At the dam site are leftover piping material that the villagers prevented the contractor from carting away after the successful completion of the first phase of piping.
- The County allocates each Ward up to KSh 33 million annually. Each Ward has a collective responsibility in deciding on how the money will be used, and on money contribution and joint activities with other Wards. Most Wards prioritised water.
- With improved sustainability measures, the water project can boost agricultural production through new agribusiness technologies. The main use of the water is domestic while the dam can support more agricultural practices. More trainings and financial support would realise this dream.
- Use of County machines in the construction of the dam reservoir made the County spend little resources for a high impact project.
- Incorporation of green energy for pumping systems will reduce project operating costs. The County Government has initiated investing more in solar power, which is reliable in most parts of Makueni and has sensitized the community to prioritize the allocation of funding for solar power to run the project.

Recommendations (Conclusion)

The dam project has been successful due to a mix of factors, including the successful identification of the project by the community, political goodwill, co-ownership and implementation with the community, a committed PMC, and a dedicated and supportive County staff.

- Holistic involvement of all key stakeholders during all stages of the project is highly recommended.
- Adequate sensitisation across stakeholders for adoption before implementation is recommended.
- Avoid implementing the project with 100% funding from the County Government. Residents may not take care of the project as they should.
- Avoid project implementation without first securing the buy-in of the County leadership and the community.
- Avoid political interference as much as possible. Settle out differences as soon as they occur.
- Other Counties are welcome to benchmark at the dam/County. The County staff and the PMC are very receptive.

Further reading

Makueni County website, Facebook page, Twitter, news reports

- NEMA website

Residents fetching water at the Kwa Mbila Dam

Leftover piping material at the Kwa Mbila Dam & the toilet in the background with project information

Kwa Mbila Dam water pump is operated by a PMC member

A water tank and water kiosk vending water from Kwa Mbila Dam

An elevated water tank, a ground tank and a water kiosk partly hidden

APPLYING PARTICIPATORY VULNERABILITY CAPACITY ASSESSMENT (PVCA) APPROACH IN BUILDING COMMUNITY-BASED CLIMATE CHANGE RESILIENCE, ADAPTATION AND MITIGATION IN MAKUENI COUNTY

There was a need for specific interventions that would ensure communities draw benefits from a project addressing what they are most vulnerable to concerning the effects of climate change in that specific community. There was also a need for project ownership where the proposal originates from the community, hence they felt entitled.

After conducting a participatory vulnerability capacity assessment (PVCA) at the ward level in Makueni County using several data collection and analysis tools, e.g. the pair-wise (preference) ranking tool, the top four hazards that emerged included drought, human diseases, crop diseases and livestock diseases.

The affected population included community members of all 30 wards in Makueni County, though the PVCA has so far been conducted in 20 with plans to do the remaining 10.

Impact of the problem on the population

- During the PVCA process, the community identified a number of hazards and ranked them according to human diseases, livestock diseases, crop diseases and drought-related problems. Drought was ranked first in all 20 wards.
    - Human diseases resulted in illness (disease outbreaks – cholera, bilharzia), death and dependency ratio increase.
    - Livestock disease resulted in the death of animals, reduced quality of livestock products, and increased expenses in purchasing drugs for livestock treatment.
    - Crop pest and diseases led to increased cost of production, poor-quality crop produce, especially fruits, and also post-harvest losses.

Drought resulted in reduced crop production leading to famine, reduced pasture availability and reduced availability of clean and safe water, hence the emergence of disease outbreaks.

Implementation of the practice (Solution Path)

- The County's Directorate of Environment and Climate Change took community members through PVCA training by giving an introductory session on basic understanding of climate change, besides data collection (using data collection tools) and data analysis (using data analysis tools).
- Action plan - after the PVCA training, the community members in a ward came up with an action plan that would be part of the PVCA report. This action plan included priority interventions for the ward.
- After the report was shared with the relevant institutions and departments, the community was appropriately allocated more resources such as veterinary officers, agricultural extension officers, building and equipping of medical centres, construction of water harvesting structures such as sand dams and earth dams to avail water even during dry seasons. This document is kept for further reference in case of fund availability for the specific ward.
- The timeline for the activities carried out in the wards where the PVCA has been conducted differs as it is influenced by factors such as funds and personnel. Administrators and local leaders conduct PVCAs in specific wards at venues of choice.

Key implementers and collaborators and their roles

The County Government of Makueni, the national government and non-governmental organisations, were the major financiers and implementers. Major collaborators included the community members, faith-based organisations and other sponsors.

Resource implications

The budget is about KSh 500,000 per Ward, which caters for facilitators' fees and fare and lunch for the community members during the training and includes a validation of the report by a larger community representation of members not attending the training.

Sustainability

After the PVCA has been conducted, a Ward Climate Change Planning Committee is elected to steer climate change actions in the ward and oversee the implementation and sustainability of climate change projects. This committee also acts as the champion in climate change matters for that specific ward, hence ensuring sustainability.

Results of the practice (outputs and outcomes)

The outcomes of the process include:

- Enlightened and educated community members on climate change mitigation and adaptation.
- The tabling of a PVCA report for the ward that shows the hazards affecting a particular ward, their capacity and vulnerability.
- Coming up with an action plan to address the climate change challenges affecting a particular ward.
- The community felt more entitled to projects selected out of this action plan, which was drafted by the community members themselves.
- Community members at the ward level make informed decisions when prioritising projects, even during the larger county budget public participation, other than climate change projects.
- Community members were better placed to identify and differentiate a climate-proof project which is more sustainable in times of extreme climate events from other normal projects that were being done without considerations of climate proofing. This way they could include such components in projects being implemented by other departments as well.
- Inclusion of youth, women and people living with disabilities (PWDs) in the training and the Ward Climate Change Planning Committee helped in addressing gender parity and inclusivity.
- The PVCA training helped disseminate climate change knowledge to the community members.
- The whole exercise helped in coming up with a community action plan to help address climate change adaptation and building resilience.

Lessons learnt

- Full community participation, influenced by gender inclusivity and bringing on board PWDs in all ward trainings for PVCA was witnessed. Community members would set their own timetables and stick to them with some going past working hours with full attendance knowing they were addressing their own challenges and could not afford to miss out since this meant the specific areas which these trainees represented would miss out in the action planning.
- Inclusion of other stakeholders in the training such as ward water officers, agriculture and health officers helped in data collection for the PVCA report and the development of a well-advised/ informed action plan addressing issues cropping up from all sectors.
- Time and resources were a challenge for the training since the community could not fully be trained on climate change matters during the allocated time per ward. Facilitators felt that there was a need for full training on climate change matters, specifically for the community members who seemed not to easily grasp climate change concepts.
- Some of the community members were not eligible enough to aid in the data collection process and formulation of the community action plan.

What would be done the same is bringing on board different stakeholders during the training to educate the community more on how climate change is impacting the different sectors and how they can fully adapt to the changing climate.

Recommendations (Conclusion)

- The PVCA exercise facilitated the community-centred action plan, hence, the community felt involved and owned the report. This report assists different development agencies to understand the priority interventions required by a ward and where to implement such projects to ensure the total benefit for the entire community.
- Budget and time were the major challenges. Allocate sufficient time and money to such projects.
- Avoid imposing opinions and ideas on the community, rather guide them to choose the best.

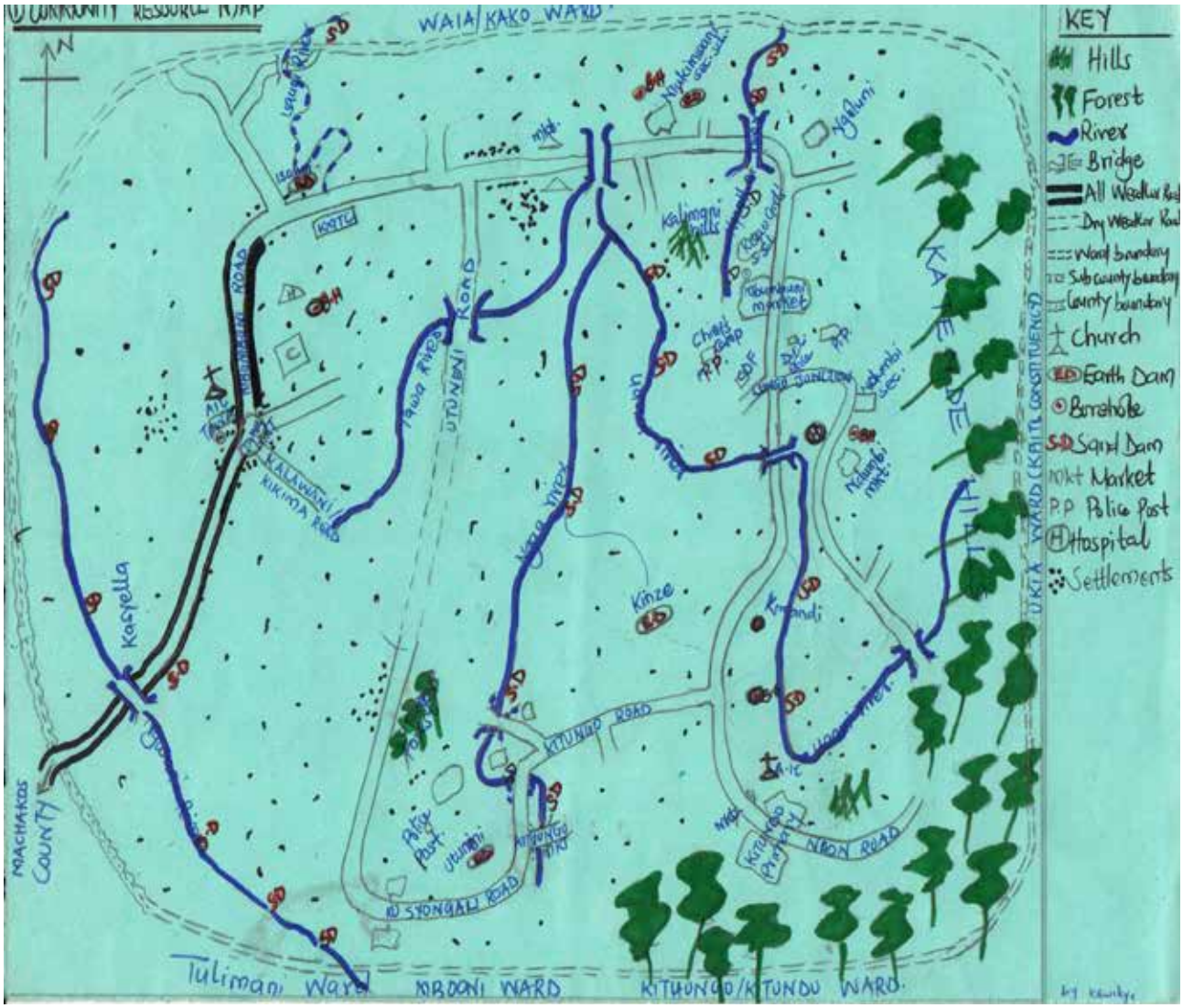
Further Reading

- County Government of Makueni website and Facebook page

Gallery

A group photo outside the G.N.C.A. Katuma (Kwa Ndunda) Church Hall after carrying out the Kisau-Kiteta PVCA and inputting.

A group of community members in participatory resource mapping of their area



The Kisau-Kiteta Ward community resource map draft

COMMUNITY-BASED REHABILITATION OF YEKANGA, MUUNI AND MBUI NZAU HILLS TO MITIGATE HYDRO-METRO-LOGICAL HAZARDS, WATER SHORT-AGE AND LAND DEGRADATION IN MAKUENI COUNTY

Introduction (Context and Challenge)

There was hill degradation through herding and deforestation across Yekanga in Makueni Sub-county, and Muuni and Mbui Nzau Hills in Kibwezi West, Makueni County. These hotspots were discovered during routing mapping. The communities had allocated funding for their rehabilitation.

Those living on the slopes of the hills of the affected areas who depend on the streams originating from the hills and firewood from the forest were the most affected.

Impact of the problem on the population

- Water shortage due to drying of streams originating from the hill because of deforestation.
- Deforestation and herding reduced vegetation cover, and this degraded the land, leading to increased hydro-metrological hazards such as landslides and mudslides leading to the death of animals and humans and the destruction of property.
- Soil erosion led to gulley formation and decreased soil fertility and all this soil would be deposited downstream, resulting in the siltation of streams and dams. This would cause flooding and loss of crops on the downstream farms.

Implementation of the practice (Solution Path)

Main activities carried out

- The County's Directorate of Environment and Climate Change undertook hotspot mapping, involving the community through the questionnaires. Some areas were prone to flooding and landslides.

- The Directorate did community sensitisation on the importance of forests and the dangers brought about by deforestation. The community became better informed so that it could prioritize reclamation.
- Afforestation programmes on majorly affected hills like Yekanga, Muuni and Mbui Nzau were initiated. Indigenous species native to those hills were sourced and planted to guarantee survival and climate resilience.
- Terracing of the hills and grass reseeding (planting) were done to help in soil conservation and vegetation cover restoration to slow the speed of water and reduce landslide incidences.
- Employment of forest guards (2 per hill) from the surrounding communities to guard the forest from illegal logging and herding.
- The above activities were carried out in Yekanga Hill- Makueni Sub-county, Muuni Hill- Kibwezi West Sub-county and Mbui Nzau Hill- Kibwezi West Sub-county in the financial year 2019/2020.

Key implementers and collaborators and their roles

- The County Government of Makueni through the County Directorate of Environment and Climate Change was the chief financier and implementer/ coordinator in collaboration with the County Agricultural Officers who trained the workforce drawn from the community on the terracing and grass reseeding specifications and guidelines.
- Organized community groups, local administration and organized self-help groups participated in the hill rehabilitation programme.
- Individual farmers were also sensitised on the terracing and reseeding on their farms for maximum impact of the interventions.

Resource implications

Besides a specific budget allocation of KSh 7 million, the programme enjoys tree seedlings donations from Muuni Hill Equity Bank Branch and free labour by the community.

Sustainability

- Regular reporting of the project's status through the Project Management Committee, whose members include the community. This ensures the sustainability of the projects.
- Indigenous trees grow naturally and depend on the rains.
- Forest guards securing the forests.
- Activities are mainly carried out during the onset of the long rains to assure the survival of the trees and grass.
- Budgeting.

After the projects have been done under the watch of the Project Management Committees, they are handed over to the Sustainability Committees (purely community members with oversight by the Ward Administrators in coordination with the Sub-county Environment Officers).

Results of the practice (outputs and outcomes)

After implementation, the Directorate undertook an assessment of Yekanga Hill whose findings included:

- Reforestation, which led to increased forest cover and increased vegetation cover, especially through grass seeding, hence controlling soil erosion.
- Terraces done in the hill reduced surface run-off, hence controlling landslides and mudslides and also reducing siltation of dams and streams by controlling soil erosion.
- The employment of forest guards helped control herding and deforestation, hence the planted tree seedlings were not destroyed by livestock.

Overall:

- Sensitization of the community led to increased awareness of the importance of forests and the sustainable exploitation of the hills. During public participation, the community identified these projects and allocated money.
- Involvement of the community in the rehabilitation programme enhanced ownership of the project and also created employment for the members.
- Increasing vegetation cover in the hill, especially the grass seeding project, helped decrease siltation in the streams by decreasing the speed of the surface run-off.

Lessons learnt

- Bringing on board the community and different stakeholders in the projects helped to ensure the sustainability of the projects.
- Through sensitization and advocacy programmes on environmental protection, the community members were enlightened, and they embraced the conservation and protection of their environment.
- What has not worked fully is the total eradication of herding in the restored hills which interferes with the planted tree seedlings and vegetation, especially the seeded grass. The budget allows a maximum of 2 forest guards per hill. There is a need for more forest guards and the use of remote sensing technology.
- The practices of terracing, grass seeding and prohibition of cutting down of trees in the

community forests found in the hills should be continuous.

In the future, the creation of fire breaks (i.e. buffer zones such as roads in between to prevent the spread of wildfires) in these hill forests to prevent the destruction of sizeable portions of the forests in case of a fire outbreak should be considered.

Recommendations (Conclusion)

- Environmental restoration is achievable and to ensure the protection of the same, the core aim is to educate the community through environmental education and advocacy to create environmental champions within the community who will take up the responsibility of protecting the environment even in absence of the environment or forest officers. In Muuni, 2 elderly people have taken initiative to guard the hill and report people who encroach. There are several self-made champions and whistleblowers who need to be recognized and utilized for continuous restoration efforts.
- Involve authorities (local administration, e.g. chiefs) in the restoration programmes to ensure law enforcement to deal with defiant environmental degraders.
- Some challenges that were involved in the restoration activity include:
    - hostility from those thriving from degrading the environment (charcoal business people and herders, some of who are influential. The solution: continuous community sensitization)
    - unclear gazettement of the county forests and those forests under the Kenya Forest Service. The challenge is being addressed to ascertain the acreages for the two. The forest function has been devolved but KFS sometimes licenses people to use county forests.
- Domesticate the devolved forest functions to ensure that there is full control and operationalization of the county/community forests.

Further reading
County Government of Makueni website and Facebook page.

Community members standing on the terraces

Community members concluding a tree planting exercise

CLIMATE CHANGE ADAPTATION INTERVENTION THROUGH PROVISION OF CLEAN AND SAFE WATER BY CONSTRUCTING A SAND DAM, A SUMP TANK AND DISTRIBUTION LINES FOR NGAI NDETHYA AREA AT MTITO ANDEI WARD IN MAKUENI COUNTY

Introduction (Context and Challenge)

The community in Ngai Ndethya and Kambu/Kathekani locations relied on shallow wells along the Kambu River which were salty and which dried immediately after the rains were over. The perennial water scarcity meant that the community struggled to access sufficient, clean and safe water they needed for domestic use, and for growing their food to avoid hunger and malnutrition. Specifically, the affected population included 432 households, 2160 cattle and 864 shoats (goats and sheep) in Mtito Andei Ward.

Conflicts over shallow wells for watering animals were rampant during dry spells. The limited supply of water for domestic use resulted in residents trekking for long distances to the Kambu River in search of water. There were outbreaks of diseases, e.g. cholera due to a shortage of water. The community crops were only rain-fed as no excess water for micro-irrigation was available, thus food shortage was a norm.

Implementation of the practice (Solution Path)

Main activities

- A Participatory Vulnerability and Capacity Assessments (PVCA) was conducted and an action plan developed with the community. A PVCA includes training on climate change and identification of hazards affecting the area, identifying community capacity and writing a PVCA report.
- Then followed the election of the Climate Change Planning Committee, which went through training on (Simple Measurable Achievable Reliable and Timely) SMART proposal writing. The Committee vetted the proposals and allocated the budget for the project.
- The community elected a Project Management Committee (PMC), which was trained and guided by the Devolution Directorate and thereafter held consultative meetings with the project contractor. The PMC oversees the implementation of the project.
- The community action plan done at the end of the PVCA recommended the construction of a sand dam, sump tank, solar installation, distribution line and water kiosks. These were done.

This project was completed in December 2016, in Ngai Ndethya-Kambu/Kathekani locations.

Project team

The Makueni County Climate Change Fund Board was the key implementer-cum-financier. The collaborators were the County water engineers for the survey and design of the project. The community members made part of the Project Management Committee members as well as the Sustainability Committee for the project.

Resource implications

The total cost of the project was KSh 4,104,334.75. These funds were drawn from the County Climate Change Fund which accounts for 1% of the County development fund to address climate change

Sustainability

To ensure the sustainability of the project, the County Government encourages ownership of the project by the community by involving the community in the problem identification, planning and implementation phases of the project by establishing a Sustainability Committee from the community.

Results of the practice (outputs and outcomes)

After implementation, an assessment done for the project generated the following results:

- The construction of a sand dam wall assisted to harvest adequate sand, thereby increasing the volume of sand to retain/store more water.
- Construction of a submerged tank to harvest water from the soil, absorbing water from the soil even during dry seasons, hence providing water to the community during incidences of drought.
- Installing distribution lines from the sump tank to tanks in the water kiosks to shorten the distance travelled to fetch water.
- Installation of solar panels to pump water reduced the running cost and limited the production of carbon, which would have been the case if a diesel pump was used.
- Benefits to the community include:
    - Improved sanitation as the community accesses water via nearby water points (kiosks).

- the emergence of micro-irrigation and kitchen garden farming. This guarantees the availability of nutritious vegetables, thereby contributing to improved nutrition in the community.

Lessons learnt

- Established climate change institutions as well as a funding mechanism for the same spearheaded the development of climate change projects.
- Carrying out participatory vulnerability capacity assessment of climate change helped the community understand climate change matters and helped in establishing priority projects to help the community adapt to climate change.
- Involving the community in the planning, implementation and sustainability of the project brought about ownership of the project, hence limiting acts of vandalism or sabotage. After project completion, the community is given 6 months to benefit as the project is observed for any issues, which the contractor has to fix within those 6 months before being paid. Afterwards, the water is sold at minimal fees and the money is used for maintenance and repairs and payment to the Sustainability Committee which takes over after implementation by the Project Management Committee.
- The community's water demands have since surpassed the estimated supply of a consistent volume of water during dry seasons. The Directorate will revisit the PVCA action plan to do another project to supplement the current supply. Future projects should be designed with a possibility of extension to ensure that later on advancements can be done to the project to serve an even larger population.

Recommendations (Conclusion)

- Construction of a sand dam, sump tank and distribution project model is the ideal way to go for provision of water to the population with ease and convenience. This is because when you build a sand dam alone, you will only harvest sand, but having a submerged tank ensures that water in the harvested soil can be stored and pumped conveniently to accessible areas. This will shorten the distance required to access clean and adequate water.
- For power options, solar energy is the most convenient, especially in the ASALs since it is ever available and minimizes running costs for pumping water as well as reduces emissions from diesel-powered water pumps.

Some of the major challenges that have occurred include:

- Bursting of pipes due to use of pipe gauges which are not fit by the contractor. Inspection of materials should be done before installation.
- Blocking of pipes due to siltation when the pipes were installed and the project stalled briefly. The problem has since been resolved by unearthing the pipes at the points where the siltation happened and removing the sand.


Ngai Ndethya Mega Sand dam and community fetching water from Ngai Ndethya water kiosk

- Solar energy disruptions due to breakdown (vandalism) of solar panels. The panels are now installed near people's homesteads where they can be guarded.
- Lack of funds to repair damaged sections of the project since no allocation was made to ensure the sustainability of the project after it has been handed over to the community. The County should have a special account for a sustainability budget to boost the income of the Sustainability Committee, especially where the project faces huge maintenance and repair costs. It is important to do proper design and survey of projects to ensure proper budgeting to avoid compromising on the design of the project due to under-budgeting.
- A reporting mechanism was not put in place to ensure that an annual report is made by the Ward Climate Change Committee to the Directorate of Environment and Climate Change to check on the impact of the project on the community in terms of addressing adaptation to climate change as well as helping to mitigate climate change. It is important to develop a system that can ensure annual reporting of climate change projects outcomes and impacts to relevant institutions.

- Project budgets should allow for unexpected miscellaneous expenses, such as repairs, to avoid the stalling of projects due to lack of funds.

Further reading

- County Government of Makueni website and Facebook page

ELGEYO MARAKWET COUNTY METEOROLOGICAL DEPARTMENT INTEGRATES INDIGENOUS WEATHERMEN INTO ITS WEATHER FORECASTING TEAM

The Meteorological Department in the Ministry of Environment and Forestry in the County Government of Elgeyo Marakwet has teamed up with local elders with proven abilities to accurately tell the weather in an initiative to integrate indigenous knowledge (IK) into the County's planning.

Elgeyo Marakwet Wazees using goat intestines to predict weather

The County Departments of Environment, Culture and Tourism identified wazees [local sages] to undertake weather forecasting in Marakwet East, Marakwet North, Marakwet South, Keiyo South (Kocholwa) and Keiyo East. And as early as 3.00 am daily, the Director of the County's Kenya Metereogical Department calls the wazees to get their forecasting of the weather for the next few days, months or years. Integrating IK has had excellent results. This collaboration has enhanced the accuracy of the weather updates shared by the Department. For example, in the year 2020, the wazees predicted the rains in 2021 might delay till May, and it happened. The wazees use such techniques as observing the direction of the shadows of the hills and mountains to tell the weather. Or, by studying the characteristics of the moon and stars and the direction to which the birds are flying (East means rains are coming, and West signals drought). The wazees can also predict locust invasion. The current wazees say the last time there was a locust invasion was when they were young.

While the wazees can predict the weather and warn of natural disasters like floods, some special old women are known to influence it. For example, during dry spells, the women erect Sodom apple and millet bow-like structures using sticks and branches, decorated with Sodom apples, millet and sorghum next to rivers and streams, which is locally referred to as 'closing rivers.' This is a prayer to God to release the rains. And sure enough, when this is done, it drizzles. This prayer is usually done by old women past child-birth age who are perceived to be pure, and thus their prayers will be favourably answered.

Soon, the County Government Elgeyo Marakwet in collaboration with the Meteorological Department will set up a radio station to host the wazees to be advising farmers and residents on environmental issues such as climate change and conservation.

TRADITIONAL MEDICINAL PLANTS AND METHODS USED TO CURE COMMON AILMENTS IN ELGEYO MARAKWET COUNTY

To encourage the preservation and use of traditional medicinal knowledge, the County Government of Elgeyo Marakwet distributed 1.1 million indigenous trees to be planted by community members. Traditional medicine, which relies heavily on medicinal plants, is still practiced in the County alongside modern medicine to cure ailments and diseases in human and animals. It is passed down generations through families.

There is growing recognition that the medicinal plants are safe, easily available at affordable prices or no cost, and are sometimes the only source of healthcare readily available to, or preferred by rural communities.

Among the medicinal trees being planted are Prunus Africana, olive trees, Sandalwood, Oleleshwa and Balanite aegyptiaca. The Oleleshwa tree has long been used by parents to cure their children of allergies, sneezing, etc. The leaves are boiled and used for steaming while the patient is covered in a blanket. With further research, it could manage diseases such as Coronavirus.

Planting of medicinal trees in Elgeyo Marakwet

The roots and bark of the Balanite aegyptiaca tree are medicinal. Besides, during the dry season, its leaves are fodder in the ASAL areas of Kerio Valley, Baringo, Turkana and West Pokot whose communities are largely pastoralists. The trunk is used for construction and its fruit has a shell similar to that of a coconut which goats eat and their cud, which is very rich in protein, is collected and boiled, then pounded and used for human consumption.

The County's rich biodiversity is host to many more medicinal trees which are used various to treat different ailments by the experienced and trusted traditional healers.

ELGEYO MARAKWET COUNTY INTEGRATES INDIGENOUS COMMUNITIES IN FOREST CONSERVATION AND MANAGEMENT FOR COMMUNITY OWNERSHIP AND SUSTAINABILITY

Indigenous forests continue to be depleted because of human settlements and activities, including farming, charcoal burning, timber harvesting and herding. This has worsened the climatic conditions in those areas with cracks appearing along the escarpment. Elgeyo Marakwet County realized the missing link in sustainable forest conservation is the non-integration of indigenous principles and practices of maintaining forests and the environment to mitigate the adverse weather experienced during the dry seasons.

In the olden days, community members could not farm near and/or along the river banks, and those who did so would suffer the wrath of the wazees (elders). The river would dry and their crops would fail. After appeasing the wazees, the rivers would once again flow with water. Today, farmers till the land up to the river banks, and apply chemical fertilizers/insecticides which are washed into the river by rain or irrigation. Domestic use of this water causes the lifestyle diseases pandemic (e.g. cancer) being witnessed today. It is important to listen to the sages and integrate indigenous knowledge (IK) into the scientific knowledge of climate adaptation. The wazees sought to live a righteous and God-fearing life, earning them a long healthy life. The United Nations Development Programme (UNDP) is supporting the County's indigenous communities, including the Sengwer, Kiptani, Ogiek, Cherangany to harness and practice IK to dialogue with Indigenous communities and integrate IK in planning.

The Elgeyo Marakwet County Sustainable Forest Management & Tree Growing Bill & Policy created a Conservation Council which comprises 12 members, including 2 from the indigenous communities and the rest from other dominant communities. The wazees in 4 sub-counties in a meeting with the Governor advised that community members should decide on their development priorities through public participation with County Government guidance on technical know-how and implementation through the Ward Development Committees which include community members. The County Government has acknowledged citizen conservation groups. This arrangement will ensure community ownership and sustainability.

Landslides due to human activities

SECTOR: YOUTH, ICT AND INNOVATION

ISIOLO YOUTH INNOVATION CENTRE: A CENTRE OF EXCELLENCE PROVIDING SAFE SPACES FOR YOUTH TALENT, SKILLS AND COMPETENCY DEVELOPMENT FOR IMPROVED LIVELIHOODS

Introduction

The study curriculum authorized by the Government of Kenya allows young people to take a short break before joining both high school and college. This break allows the youth to take months away from the strict school life which contributes to how one's life is shaped before moving to the next stage. During these short and long breaks, Isiolo County has had incidences of youth decadence such as drug use and violent crime.

Most parents opt to send these young people for short-course training in basic computer packages among other courses. The training is in most cases offered by a few schools which are usually private institutions with few computers and expensive school fees. This has caused the poor to remain at home while those who can afford the computer packages proceed to train.

Communities in Isiolo County being among the marginalized groups in Kenya have endeavored to empower the youth through talent and business support to engage in County issues and become active citizens who not only participate in the selection of leaders but also can become leaders at both the local and national level. For this to be effective, there is a need to provide the young people with a platform for engagement on governance and leadership issues. This need led to the establishment of the Isiolo Youth Innovation Centre (IYIC).

IYIC is an initiative of the County Government of Isiolo, the Kenya School of Government (KSG) and UNDP. The idea was birthed in 2017 when the Isiolo County Governor approached UNDP for support in capacity building initiatives under the devolution programme. Discussions with KSG pointed to a gap in youth capacity building since the World Bank and USAID Ahadi were undertaking training programmes in a wide range of courses targeting the County Governments' Executives and Assemblies.

Implementation of the Isiolo Youth Innovation Centre

The UK Government, through the then DFID [now Foreign, Commonwealth & Development Office (FCDO)], provided UNDP with funding to support devolution activities in FCDC Counties in the previous devolution programme (Integrated support to the devolution process in Kenya) which ended in 2019. Support to IYIC transitioned to the Joint UN Devolution Programme (Consolidated Gains and Deepening Devolution in Kenya project), which is funded by the Governments of Sweden, Finland and Italy. Norway funds also supported some of the activities in IYIC through the Strengthening Devolved Governance in Kenya project. To establish the Youth Innovation Centre, the County Government provided space that was refurbished by KSG while UNDP provided the ICT equipment and furniture and the Centre's branding. The Centre was formally launched in October 2020.

The vision of the Centre is, "Innovative inclusive and sustainable Centre for an empowered youth," while its mission is, "To provide a safe and supportive environment by nurturing talent, developing skills and competencies for improved livelihoods." The IYIC aims to build the competencies of young women and men to take on jobs or start businesses , while also working with local institutions to adopt new business models and expand the number of jobs available for youth. The Centre is also inculcating a governance engagement culture among the youth to enable meaningful dialogue with their leaders and participation in County planning and budgeting.

Structure of the Isiolo Youth Innovation Centre

Following the launch of the Isiolo Youth Innovation Centre in October 2020, a team of youth volunteers (2 from each of the 15 wards) was selected to mobilize young people and coordinate their participation in the activities of the centre. In December 2020, volunteers sensitized all the 10 Wards of Isiolo County on the Centre. The next step was the formation of the ward structure in each ward headed by a Coordinator who is a member of the IYIC Advisory Council in line with the Centre's structure. All wards had selected their Coordinators from the 10 wards by May 2021. An additional 11th Ward was created for PLWDs with their coordinator and officials.

Main activities carried out at the Isiolo Youth Innovation Centre

1. **Essential Computer Literacy Course** — parents who cannot afford to pay the exaggerated private institution school fees can now pay a cheaper amount at the Centre for the same training.
2. **County Sports/Football Club** — the Centre has established a football club where the youth interested in sports can train with a qualified coach and better their skills.
3. **Coffee talks** — the Centre provides space for young people to participate in discussions about County governance and leadership.

4. **Film production classes** — the Centre offers short training on film production, acting and scripting.
5. **Agriculture (Certified Hydroponic Farming Training)** — the Centre offers training on how to use technology in agriculture and embrace climate change in Isiolo.
6. Personal development, CV writing and cover letter writing training
7. Entrepreneurship Training
8. Computer Networking and Security Training
9. Ajira Digital Courses Training
10. Martial Arts Classes

Key partners, implementers and collaborators in the establishment and operationalization of the Centre.

Partner	Support provided
Huawei	Wi-Fi connectivity to the Centre; Computer networking and system security training (50 Youths trained)
Miramar International College	Certified hydroponic farming training (164 Youths completed 1st cohort)
Information & Communication Technology Authority	National Optic Fibre Backbone (NOFBI) high-speed internet connectivity to the Centre
Ajira Digital	Content writing, digital marketing and transcription, among other digital skills tailored for the online workspace (65 Youths trained)
Kenya Film Classification Board (KFCB)	Licensing and training of local content producers (40 Youths trained)
Catholic Relief Services	Supported training on Leadership during International Youths Day 30 participants trained
Kenya Red Cross Society	basic life skills training
People's Development Consultancy	Curriculum vitae (CV) writing and personal development (45 Youths trained)
Ministry of Housing	Sustainable interlocking block making (75 Youths trained)
Kenya School of Government	Essential Computer Literacy Course (Ongoing, 100 learners completed)
Isiolo Red Tigers Taekwondo, Mr. Nicholas Willigis, Trained Instructor	Martial Arts Class ongoing with 30 youths enrolled and engaged in martial arts competitions in the Eastern region

Sustainability

The Youth Innovation Centre is one of the priorities of the Isiolo County Government and is partly captured in the 2017–2022 County Integrated Development Plan (CIDP). Every financial year since its inception, the County Government allocates resources to facilitate youth initiatives in the Centre.

The County is also in the process of developing the Youth Inclusion Bill, which is an effort to anchor the Centre in legislation for its sustainability while also ensuring representation of young people at all levels of governance and decision making.

Results of the Youth Innovation Centre

1. ***Empowered youth to participate in leadership:*** 940 Young people in Isiolo County have been empowered through the coffee talks to participate in leadership programmes and activities with confidence and awareness
2. ***Job opportunities:*** The visibility and experience from the Centre has assisted the youth who have been trained there to secure employment in both County and private sectors. As a result, 4 youth secured formal employment and 20 youth are pursuing opportunities in business, videography, agriculture and saloon businesses.
3. ***Reduced rates of drug abuse:*** Previously, the number of youths affected by substance abuse was high compared to now that the Centre provides a youth-friendly space to engage in various aspects of personal development. A youth-friendly peer-counselling unit also provides a space for youth to face their fears and find a way to cope with their situations.
4. ***Computer literacy among the youth:*** With affordable computer classes, 100 youth in the County accessed basic computer skills.A further 25 youth are currently enrolled in various computer classes.

5. ***Talent support:*** 150 youth equipped with different talents like dancing, football, Martial Arts and even acting have been allocated coaches and trainers who support their talents.

6. ***Disciplined and empowered youths:*** 940 youth empowered to have a focused life through guidance on the pursuit of visions and how to avoid distraction from peer pressure.

7. ***Agribusiness ventures:*** 164 youth equipped in agricultural-influenced businesses and income generating activities, including aquaculture, beekeeping, hydroponic farming and horticulture. This has led to the growth of self-employed groups who practice fish and beekeeping as a source of income.

Lessons learnt

The Isiolo Youth Innovation Centre has had a great impact on a lot of youth in Isiolo County. For example, the Entrepreneurship training has changed the lives of some youth.

1. The youth who benefitted from the training were able to put the knowledge gained into practice with a great level of success. For instance, Josephine Kendi, a resident of Bullapesa Ward attended training on Entrepreneurship at the Centre, and with the knowledge gained, she undertook the strengths, weaknesses, opportunities and threats (SWOT) analysis of her business. As a result, she transformed her business, from hawking her beauty products to opening a shop. Jabir Hassan also used the business plan formulated in his group discussion during the training to start his own camel milk supply business.

2. The safe space provided to the youth has been monumental in helping the youth avoid pitfalls like drug abuse while also allowing them to use the Centre to gain skills. Harun, like many young men in Isiolo, has found a refuge where he can express himself and also get to learn new skills. Harun is a beneficiary of the Essential Computer Literacy Course and continues to utilize the Centre to produce content on his YouTube page. Yasmin, after benefitting from the computer literacy classes, decided to volunteer her time at the Centre to impact more youth. Kamal Ibrahim, is a self-taught content producer, editor and director. He regularly produces content for clients and also for his YouTube page, Da Prince Unit.

UNDP also supported the Isiolo County Public Participation platform dubbed "Sema Usikike", which has also played a role in engaging the youth on different projects being implemented as well as informing the youth about training opportunities available at the Centre. Through this platform, the youth have shared their opinions on different issues that they would like addressed as well as feedback on training conducted at the Centre.

Recommendations

1. There is a need for intense resource mobilization for the Youth Centre to enable the following next steps to be achieved.

   a. The Innovation Centre should have a strategy in place to monitor and document lessons from established projects to avoid repeating previous failures while implementing new projects. The Strategy should include having a secretariat and a board of Management to ensure there is staffing, proper oversight and also reliable funding to sustain the programmes.

   b. There is a need to decentralize the Youth Innovation Centre to the Sub-counties and eventually up to the ward level to ensure it has reach and relevance across the County

   c. Other Counties should consider establishing similar centres with customized programmes for youth within those Counties in line with specific County needs.

Youth attending a computer class in the Isiolo Youth Centre

Isiolo Innovation Youth Centre

NYANDARUA COUNTY EMPOWERS YOUTH THROUGH SKILL TRAINING AND PROCUREMENT OF NECESSARY EQUIPMENT

The County Government of Nyandarua through the Department of Youth, Sports, Gender and Social Services has invested in a youth empowerment programme that has been helping young people with equipment and basic training to get skills that enable them to become self-employed. Nyandarua has a population of 638,289 according to census data of 2019 and more than 50% of its population are young people. Unfortunately, the youth in this County are struggling with the high rate of unemployment. The County has therefore stepped in and issued equipment to over 400 groups from across all the wards in the County. They include public address systems, large format printers, motorbikes, incubators, brick making machines, salon and barber equipment, car wash machines, bakery equipment, milk ATMs and fuel pumps. Those interested in the youth empowerment project are expected to form common interest groups then write clear proposals to the County Department of Youth requesting for the equipment. The proposals are vetted by the County then basic training is offered to those who qualify and finally the needed equipment and machines are disseminated. The empowerment programme is aimed to enhance the participation of the youth in policymaking and implementation, governance, capacity building, training and decision making to stimulate growth, job creation and development.

Some of the equipment for the youth empowerment project

TECHNOLOGY CHANGING LIVES: THE CASE OF MAKUENI COUNTY INNOVATION HUB

Introduction

What was the problem/challenge that needed to be addressed?

Building a culture of innovation and exposure to potential innovation opportunities for Makueni residents.

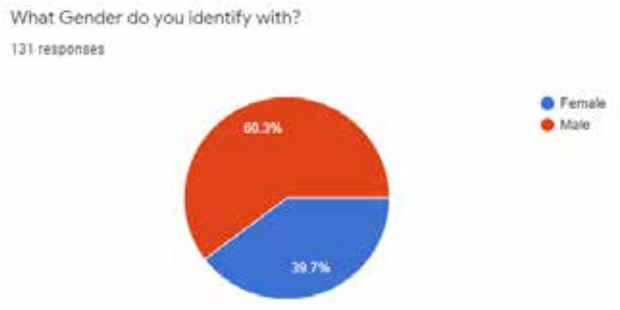
Background Overview:

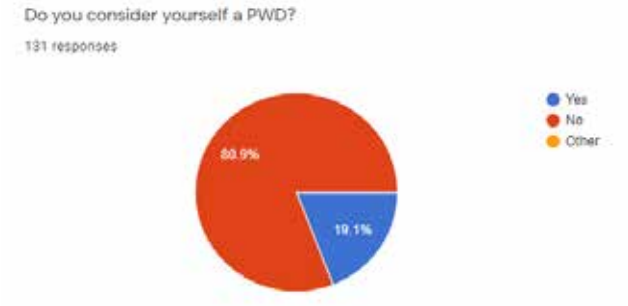
Makueni County in its early years of governance ran an ICT development flagship programme termed Tusomeei Computer Nduane (TCN) which was initiated by the Governor, H.E. Prof. Kivutha Kibwana. It aimed to provide basic skills and knowledge on computers to the communities of all social inclusions. The project spurred a need for more advanced knowledge and skills in ICT development leading to the inception, construction, equipping and operationalization of ICT centres across the County. The centres are mandated to offer basic ICT skills training coupled with e-government services to community members at the grassroots. It was also in the realization that the communities are equipped with digital tools such as smartphones, but there was a need to make use of the digital tools for their productivity and improve livelihoods, for example, using a smartphone to acquire information on increasing agricultural productivity.

A review of the programme revealed a need to capture innovators and build them an eco-system and as such an innovation hub; and therefore the tech hub was constructed and equipped in FY 19/20.Given the fact that operationalizing the hub required several programmes to activate, it was seen fit to run an innovation challenge under the theme ' Economic Recovery amidst COVID-19' where a total of 5 innovative ideas were awarded on May 28, 2021

Which population was affected?

The affected population was mainly the youth but space has been opened up to ensure social inclusivity and so, women, children, persons with disabilities (PWDs) and the older population are targeted and included. Below is a sample report of the data of forms used.





How did the problem impact the population?

The lack of ICT skills reduced the population's employability in jobs that required those skills. It also limited their competitiveness (need to build on the innovative culture) in areas of interest such as farming since they lacked the information that would help them excel. They needed to access the information through the Internet, and most of them already had smartphones they could use. Other youth had ideas that needed nurturing.

Considering Makueni is largely agriculturally based, the communities needed to improve and leverage digital tools such as smartphones not only as communication devices but also to make use of the digital tools for their productivity and improve their livelihoods by gaining entrepreneurship skills and increasing their knowledge on specific computer development avenues such as app development and accessing e-citizen services.

Implementation of the practice

What were the main activities carried out?

1. Advanced assessment of ICT skills done to the community from village clusters.
2. Documenting evidence-based concepts and ideas supported with statistics to present them in a Cabinet paper to prompt discussions at the decision-making level, allocation of budgets and for approval by the Governor.
3. Through the high-level discussion with the leadership of the County, the World Bank came in and facilitated the construction of the Innovation Hub (also referred to as the Hub).
4. Designing, preparation of Bill of Quantities for the project and engagement of contractors.
5. Development of computer hardware specifications infrastructure for the Hub.
6. Identification and onboarding of another partner (Slovakia) that gave a grant that supplemented the County Government budget to equip the Hub with computers.
7. Operationalization was done in April 2020; the County involved IBM in the training and up-skilling of officials in the County Community ICT Centres.
8. Operationalization of the tech hub prompted the need to seek partnerships such as the University of Missouri from the US to support youth at different levels such as at high school level and above, in building an entrepreneurship model geared towards workforce development.
9. Running an innovation challenge to build an eco-system for innovators from the region and across the country, had partnerships with Association of countrywide Innovation Hubs, and Communications Authority of Kenya who provided a grant of Ksh 500,000.

When and where were the activities carried out?

The construction of the project began in August 2019 and was completed by March 2020. The ICT Hub is located at Green Park, Wote town. The programmes are mainly hosted at the tech hub.

Who were the key stakeholders and what were their roles?

1. World Bank —together with other stakeholders was involved in designing Green Park and financing the construction of the Hub.
2. Slovak Embassy — gave a KSh 500,000 grant in support of equipping the Hub with computers.
3. IBM — supported in training and up-skilling of the County community ICT Centre officials.
4. Google — through its implementing partner, Africa 118, has been upskilling communities in digital skills and onboarded youth who would support in mapping out the region through the Google Maps initiative.
5. The University of Central Missouri — workforce development initiative as seen in the link: https://makueni.go.ke/news/ucm-partnership-with-south-eastern-kenya-economic-bloc-focuses-on-education-and-workforce-development/
6. Department of Education — through Technical Training Institutes, provided information on how to use the tech facilities.
7. Association of countrywide hubs –provided technical aspects of the innovation challenge.
8. Communication Authority of Kenya- grant of KSh 500,000 to the innovation challenge.
9. Youth and Success Association –in celebrating the Girls in ICT Day and having worked with the Department previously in launching the Girls in STEM initiative.

Results of the practice

What are the outcomes?

1. A community of innovators was created to sensitise the community on matters of technology.
2. Greater productivity of the local community due to their increased knowledge in the use and interpretation of ICTs, including being comfortable in accessing e-government services.
3. Supported school-going youth to build their ICT school projects during the pandemic.
4. Continuous access to e-government services at the ICT centres.
5. Kids aged 8-14 years are exposed to the use of ICTs at an early stage.
6. Regional impact of areas around Makueni through participation in an innovation challenge — youth who are selected as winners have a chance to access start-up capital.
7. Information awareness for techies through monthly web seminars.
8. Local girls' schools offering computer classes identified to participate in a global competition in technology; they reached the quarter-finals.
9. Strengthening of partnerships through working together at different levels of given programmes.

Was an assessment of the practice carried out? If yes, what were the results?

Assessment to be done by the Department of Monitoring and Evaluation.

Which key activities undertaken ultimately led to positive results?

1. Political goodwill —support by the top leadership.
2. Strong partnership of the County with stakeholders like World Bank, Slovak Embassy, Association of Countrywide Innovation Hubs, Communications Authority of Kenya
3. Sensitization efforts to the community on the opportunities of the innovation hub. A lot of people turned out to be trained. For instance, the Hub received over 200 applications for a planned training and had to stagger the training to accommodate them, given the nature of the pandemic

Lessons Learnt

The project ran smoothly and was implemented on time. This was facilitated by:

1. Visiting already existing practices and learning from them. Some of the facilities that were visited include existing hubs.
2. Teamwork among implementers assigned to the project.
3. Stakeholder engagement provided the needed expertise.
4. Proper working channel with lead supervisors.
5. Thought leadership, good relationships and transparency right from the departmental level to the Executive of the County Government.
6. Involvement of the local community in public participation, making it easy for members to own the project.

The project (hub) is still at the inception stages and it is being keenly monitored to capture all lessons.

Recommendations

Sectors looking to undertake a similar project should consider the following:

1. Assess the implementing team and make it a priority to bring them on board from the beginning so as to be on the same page regarding the scope, objective and concept before the rollout.
2. Leverage the experiences of different team members, and communicate to the team clearly for the idea to be pushed forward easily to avoid ambiguity or obstruction by decision-makers.
3. Bring in stakeholders whose mandates align with your objective to speed up the articulation of project success.
4. Hold meetings to ensure every team member is aware of the expected output.
5. Sensitization sessions through webinars to update the community about tech areas.

What would you avoid?

These were lessons learnt from previous similar projects to make future projects perform better.

1. Select the project team to ensure members know what is to be done and more time can be focused on achieving objectives rather than on training. Equip them with all the necessary information from the beginning of the project.
2. To get support, especially from the County Government, ensure that the County Executive Committee Members are updated on the project and its importance to the communities' target groups such as youth and differently-abled individuals.

3. To ensure that the project is understood by all prospective stakeholders, ensure that there is clear communication, especially in the technical bits. Ensure that language is simplified and any individual with an interest can speak in the project's favour — make everyone feel part of the project.

4. Finally, ensure there is room for cross-learning with similar hubs. Share best practices that work for you and also get information on best practices working for them to create a superior hub that elicits innovative ideas and brings out the potential of everyone involved.






Kids Tech Camp-April–May 2021


Girls in ICT Celebration

MAKUENI INNOVATION CHALLENGE 2021

SECTOR: AGRICULTURE AND VALUE ADDITION

NAKURU COUNTY WAREHOUSE RECEIPT STORAGE SYSTEM

Introduction

What was the problem/challenge that needed to be addressed?

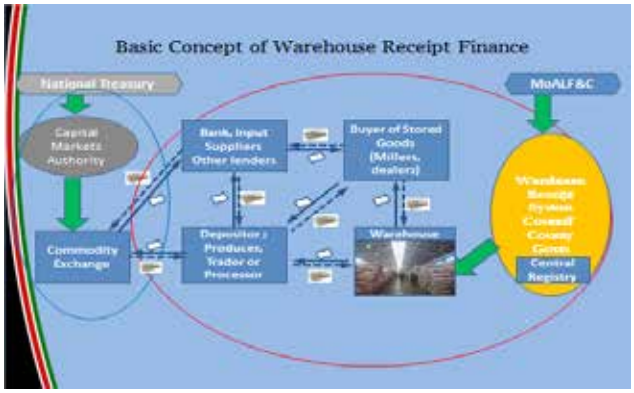
Reducing post-harvest losses and embracing an efficient market with standard quality and weights

Background overview:

Nakuru County is one of the leading Counties that depend on agriculture to boost its economy and food security. With massive production of harvested goods, most farmers experience post-harvest losses due to saturated products in the market and a lack of good storage units that can keep the foods fresh for a longer period. To deal with this challenge, the County Government of Nakuru has introduced a Warehouse Receipt System which will help farmers, producers and dealers to deposit their produce in certified warehouses for proper storage. Farmers who store their goods in the warehouses are issued with a Warehouse Receipt (WR) which states the type, weight and quantity of stored products and also as proof of ownership. The receipt can be used as collateral, the receipts can be used to access credit from participating financial institutions or traded in commodity markets, reducing pressure on farmers to sell their produce immediately after harvests when prices are usually low.

Legal Framework:

The Warehouse Receipt System Act, 2019: An Act of Parliament to provide a legal framework for the development and regulation of a warehouse receipt system for agricultural commodities, the establishment of the Warehouse Receipt System Council and for connected purposes.



How the Warehouse Receipt System works

Implementation of the practice

What were the main activities carried out?

The County Government through the CECM Agriculture carried out the following activities to ensure the project was a success.

1. Licensing of the warehouses within the County;
2. Encouraging farmers to consider the warehouse storage idea through sensitization and promotion of confidence in the system;
3. Establishing and maintaining a County registry for the management of warehouse receipt transactions;
4. Promoting the development of a County network of privately or publicly managed warehouses with the capacity to issue warehouse receipts;and
5. Developing and implementing strategies to facilitate the utilization of the warehouse system by smallholder farmers and creating support mechanisms to facilitate access to warehouses by all farmers from different Sub-counties.

What are the outcomes?

The following were the benefits to producers

1. Direct negotiation with grain dealers/buyers
2. Trade of commodity exchanges in a structured trading mechanism
3. Provision of storage capacity to avoid post-harvest losses
4. Assured safe storage both guarded from theft and with high hygiene standards

The following were the benefits to traders

1. Flexibility in the sale process as farmers are not forced to sell in distress; they have the choice to wait for more favourable prices, and this eliminates concern over delayed payments
2. Increased lending to the Agricultural sector by providing alternative collateral (commodity) and mitigation risk to the Banks within a structured trading system
3. Standardization of commodities thus improving quality and grading in the entire value chain/ checks post-harvest losses

The following were the benefits to warehouse operators

1. Aggregation of produce by small-scale farmers enables access to large traders, processors and government at a better price.
2. Small-scale farmers can participate in a modern and efficient market with standard quality and weights.
3. There is confidence in the system given consistency and assurance to the buyer that the commodity is stored safely and is of known tradable quantity and quality.

Lessons learnt

1. Sensitization and assurance of the products' safety was important to encourage farmers to consider the warehouse idea.
2. Reduced price volatility and improving liquidity is the first step towards Commodity Exchange and improved price discovery.
3. The strategy and plans that included collaborations with other partners contributed to the success of the project.

Recommendations

Sectors looking to undertake a similar project should consider the following:

1. Sensitizing the farmers, buyers and dealers on the importance of the warehouse before implementation.
2. Investing in well maintained warehouses with high hygiene standards will create trust from both sellers and buyers.
3. Creation of practical support mechanisms to facilitate access to warehouses by all farmers from different sub-counties will aid in the general success.

Launching the first licensed store in Nakuru

NCPB warehouses

Store No.3, the only licensed store in Nakuru County

On 3rd March 2021, the Nakuru County CECM for Agriculture, Livestock and Fisheries, Dr. Immaculate Maina issued the first Warehouse Operator's license to National Cereals and Produce Board Store No.3 at Nakuru NCPB Depot. The County is the first to implement the Warehouse Receipt System under the new law. The store can hold 50,000 90kg-bags or 4,500 tons. So far, this is the only licensed store in the country.

Tuiyotich CBO from Mauche Ward, Njoro Sub-county was the first farmers' group to use the WRs in the country. On this day, the group deposited 5 tons of aggregated maize in the newly licensed store.

Plenty of room for storage

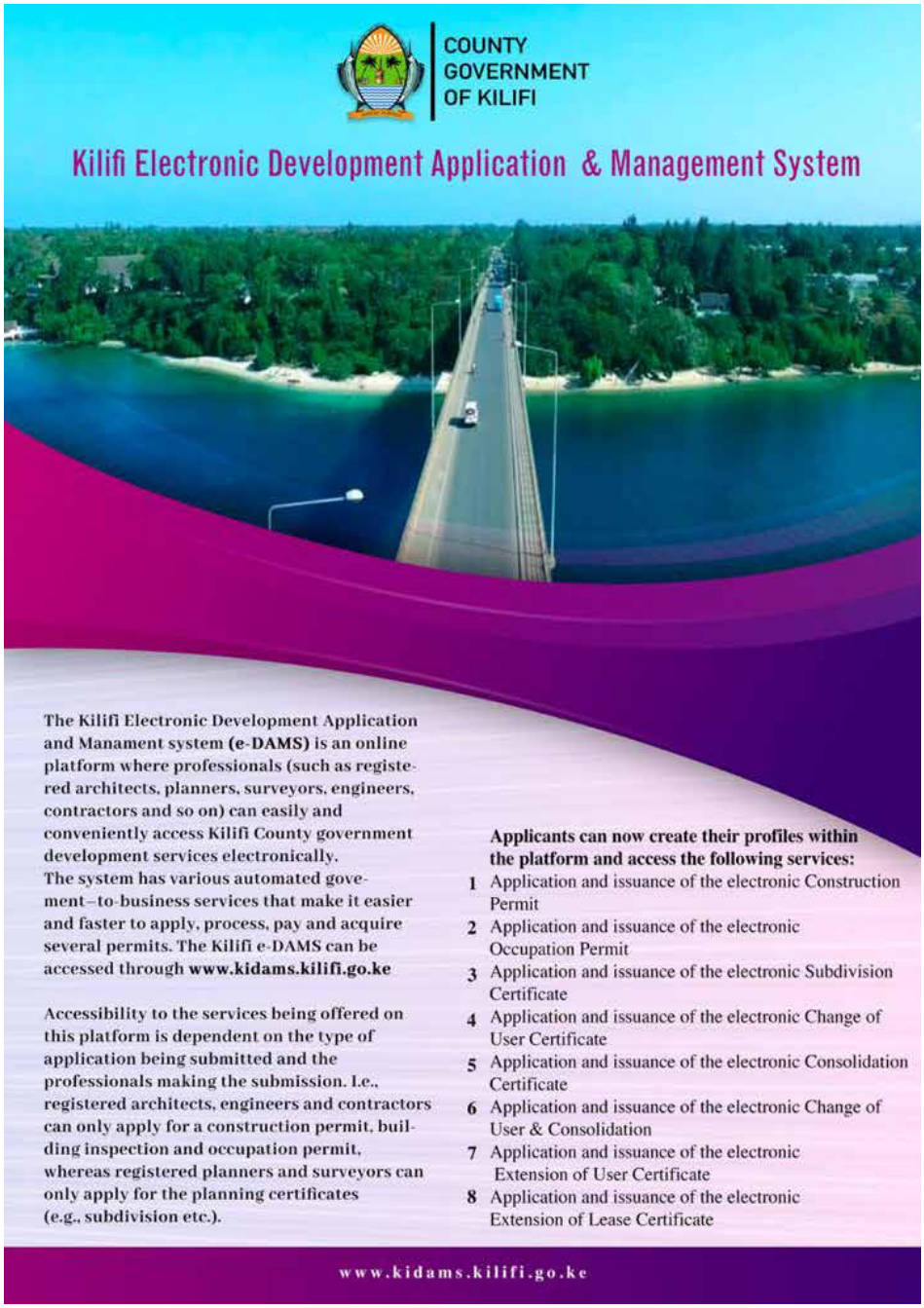
Safe storage of farmers' produce

SECTOR: LANDS, PLANNING AND URBAN DEVELOPMENT

KILIFI COUNTY UNVEILS A DIGITAL PLATFORM FOR APPLYING FOR BUILDING PERMITS

The County Government of Kilifi has unveiled a digital development application platform to help investors get quick approval of their building permits. This strategy, known as Ki-Dams is aimed to help residents to apply for their permits at home without having to visit the County offices. With this strategy, the County Government anticipates that the digital platform will lead to eradication of corruption cases which emerge from physical interactions between County officials and development investors in need of services. This platform has started to aid planners, surveyors, engineers and contractors in assessing quick permits and certificates.

The digital application which is anchored in the building permit sector on the E-government platform also creates an investor-friendly environment to not only attract more investors and create more jobs for residents but also allow investors to apply for services like approval of building plans from the comfort of their homes. The same platform also supports the application of consolidation certificates as well as the application of the electronic extension of user certificates and lease certificates among other services.



CONCLUSION

Improving service delivery by County Governments is key to gaining and maintaining citizens' trust. While these good practices and innovations may have worked, they must be monitored and evaluated to determine areas that need further innovation, a culture that should be encouraged and rewarded. The CoG is committed to building Counties' capacity for timely documentation and sharing of knowledge which is crucial for innovation.

APPENDIX 1: COUNTY LOGOS

 Mombasa 001	 Kilifi 003	 Isiolo 011
 Makueni 017	 Nyandarua 018	 Nyeri 019
 Elgeyo Marakwet 028	 Nakuru 032	 Kakamega 037
 Vihiga 038	 Siaya 041	 Migori 044
 Nyamira 046		

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Dr. Nancy Njeru	Health Expert, Council of Governors
Mr. Kenneth Irungu	Karatina Sub County Hospital, Nyeri
Sakina Mamdani	Karatina Sub County Hospital
Patrick Musyoki Kibwana	Chief Oficer Health Services, Makueni County
Stephen Ndolo Kiio	Director of Medical Services, Makueni County
Mr. Kennedy Ombogo	Director of Public Health, Migori County
Judith Amisi	Health Information Officer, Migori County
Dr. Ian Omuom	In-Charge of Isolation Centers in Migori County
Alice Wambui	Chief ICT Officer – Makueni County
Dr. Jerusha Oluhano	County Pharmacist, Head of Health Products and Technologies Unit, Department of Health, Vihiga County

List of Resources Persons (Informants)

Name	Designation/Department	County
Ms. Mary Mbenge	Chief Officer, Natural resource, Environment & Climate Change,	Makueni
Mr. Boniface Mutua	Director economic planning,	Makueni
Mr. Stanlus Matheka	SDGs Champion, Makueni County	
Mr. Raphael Mutunga Mwikya	Sub-Ward Administrator,	Makueni
Sammy Mutune,	PMC Chair, Kwa Mbila Earth Dam	Makueni
Teresia Keli	Machine Operator/PMC Member	Makueni
Damaris Mwikali	County Forester	Makueni
Dr. Rachel Kamau	Member of County Executive Committee for Health	Nyeri
Dr. Oscar Agoro	Antimicrobial stewardship focal person	Nyeri
Dr. Ochieng Odhoch	Head of Isolation Centres	Migori
Dr. Ian Omuom	In-Charge Isolation Centre	Migori
Alice Wambui	Chief ICT Officer	Makueni

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