

Towards Realization of Vision 2030

KENYA POLICY BRIEFS

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Table of Contents

SERIES 1: ECONOMIC PILLAR

Dairy Goat Sector Enhancement Strategies for Sustainable Livestock Farming Communities <i>Dr Reuben Kikwatha and Prof Dorothy Ndunge Kyalo</i>	27
Role of Financial Capabilities in Harnessing Digital Mobile Payments for Enterprise Success <i>Grace N. Muraya and Dr Radha Upadhyaya</i>	29
Improved Sorghum Variety: A Forgotten Gold in the Kenya Drylands <i>Dr Evans L. Chimoita</i>	31

SERIES 2: SOCIAL PILLAR

Revisiting Kenya's Ban on Plastic Carrier Bags <i>Elmah O. Geoffrey and Dr Jane M. Mutune</i>	33
Policy Implementation and Performance of HIV Prevention Projects <i>Anthony Ndungu and Prof. Harriet Kidombo</i>	35
Key Fire Disaster Prevention Factors in Informal Settlements in Nairobi <i>Dr Samuel Mwituria Maina and Prof. Peter M. Ngau</i>	37
Patients with Chronic Kidney Disease: How Can They Make Informed Nutritional Decisions? <i>Dr Rose O. Opiyo, Dr Anthony Were, Dr Esther Nabakwe, Alexander Mbogo, Prof. Joyce Olenja, Zipporah Bukania</i>	39
Replenish Millions of Kenyan Household's Granaries Through Forest Restoration <i>Jane Mutune</i>	41

SERIES F: FOUNDATIONS

Drastic Massive Loss of Women's Diets Diversity Due to Changes in Season <i>Sophie Ngala and Dasel Mulwa Kaindi</i>	43
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ABOUT

The Kenya Policy Briefs presents translations of research results from universities and research institutes for a policymaker and media audience. It targets those who formulate or influence policy. The briefs seek to provide evidence-based, high quality, and practical policy recommendations directly addressing issues under each objective of Kenya's Vision 2030 Medium Term Plan III as shown in the table. In each issue, the briefs are categorized into five series each addressing one of the five core components of Vision 2030:

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Series 1 – Economic Pillar: Agriculture and Livestock

Dairy Goat Sector Enhancement Strategies for Sustainable Livestock Farming Communities

Dr Reuben Kikwatha and Prof Dorothy Ndunge Kyalo

Key Messages

Institutional linkages and collaborations are key strategies for enhancing the sustainability of dairy goat projects

Continuous farmer capacity building and establishment of sustainable community structures are necessary.

Dairy goat production technology requires special infrastructure within farming communities requiring the intervention of the government and development partners.

Enhanced value chain structures, effective market systems are drivers for improved farmer incomes and livelihoods.

Context

Livestock production remains a critical sector in the agricultural economy of developing countries. Among the livestock production systems, dairy goat production has increasingly gained popularity as a significant contributor to this important sector. Innovation and adoption of new technologies such as the promotion of dairy goat production, improvement of indigenous goats for better production are poised to make an even bigger contribution. This is in particular to the Kenya Big Four Agenda focused to eradicate extreme poverty and hunger, promote gender equality, ensure universal health care for citizens, habitable housing as well as tackling climate change by 2030.

Dairy goat farming has several benefits such as enhanced nutrition from the consumption of milk (Peacock, 2008), the creation of jobs through provision of animal health, breeding, and improved household income from the sales (Peacock and Hastings, 2011), provision of manure, and the vital role in cementing social relationships. Chenyambuga and Lekule (2014) assert that social-economic usefulness of dairy goats cannot be underestimated. Therefore, a profound concern on the sustainability of dairy goat farming is critical. In Kenya, the common

dairy goat breeds include Saanen, Toggenburg and Alpines, and their crosses with Saanen breed leading in the milk production.

In the 1990s and early 2000 goat milk consumption accounted for a small but growing percentage of the Kenyan dairy market. FAO (2011) estimates that over 70 per cent of the milk sold in Kenya originates from dairy cows with only 0.02 per cent from dairy goats. Unlike dairy cow milk where markets are organized, producers of goat milk are left to look for local buyers. In recent years, dairy goat farming in Kenya has doubled following an increased interest in the venture by many farmers in the country. This is because consumers have come to prefer goats' milk to that of other livestock due to its nutritious and easy to digest qualities. According to statistics from the Ministry of Agriculture, the total goat population in the country was 15 million in 2018, of which 400 thousand were dairy goats. This was an increase from 13 million of which about 200 thousand were dairy goats (Oyugi, 2019). Dairy goats contributed 4.2 per cent of the total milk production in the sector in 2016 (KDB, 2016). Unfortunately, policy and the legislative environment do not favour dairy goat production. For instance, CAP 336 defines milk as "milk for a cow", leaving all the other milk producers out. It is essential that goat milk production is mainstreamed

Dairy Goats



and related projects adhere to sustainability criteria

Approach and Results

The study was conducted among dairy goat farming projects in Tharaka Nithi County.

Social Economic implication of dairy goat projects. Dairy goat projects have faced the problem of sustainability affecting their ability to achieving both current and future needs. This study established that the key obstacles to sustainability include the high cost of dairy goats project management, poor market linkages, inadequate dairy goat husbandry skills and knowledge, infrastructural challenges, minimal support from the government in extension services, and expensive health services from private service providers. However, dairy goats have a high potential for improving the social-economic status of livestock farmers. The 39.4 per cent of dairy goat farmers have benefited from the venture and confirm its potential in livelihood improvement.

Dairy Goat project Beneficiary Targeting. The success of a project lies not in the fact that it is necessarily targeted, but rather in how it is targeted. This study found gaps in the way dairy goat projects beneficiaries are targeted leading to project failure. Key findings were:

Gender composition disparity: 56.9% of the dairy goat farmers were men and 43.1% women. Gender was not a consideration in dairy goat farming

Age Disparity: 42.6% were above the age of 50, while 42% were between 40-49 years, 14.4% were between 30-39 years. Only 1.1% were below 30 years.

Beneficiary needs: 48% of farmers were happy that their needs were addressed.

Dairy Goat Farmer Capacity. Sustainability structures such as community-based organizations (CBOs), cooperatives, and self-help groups are key to sustainable dairy goat projects.

Skills and Knowledge: Dairy goat's management is capital intensive compared to keeping the local goats and requires special skills, knowledge, and technics such as breeding, husbandry, management, healthcare, and infrastructure maintenance. Only 37.7% of dairy goat farmers have such skills and knowledge.

"Peer to peer learning and exchange was employed as a faster and sustainable method of information transfer but unfortunately only a few remaining initial farmers who were trained by the project officials have the necessary capacity; new farmers do not have" - Farmer

Resource Contribution: Only 33% of farmers could contribute financial resources to their projects without external support while 17% think dairy goat projects cannot succeed without the support from the government and NGOs.

Community organization: The majority of self-help groups formed to spearhead the

goat dairy farming projects disintegrated leaving only 47.7% of the farmers organized in strong self-help groups and are doing better than their peers not in groups.

Institutional Linkages and Support. Adequate linkage and involvement of relevant key actors and institutions in the projects at a different level are very significant. Gaps were identified in institutional linkage to support dairy goat projects.

Health service institutions: Dairy goat health services are available but at a high cost. There was a slow emergency response rate coupled with practising veterinary quacks. Only 16 per cent of farmers enjoyed quality, accessible and affordable services.

Market institutions: Markets are disintegrated and not within the reach of the majority. They rely on organized markets away from the community. There is also no specific market for dairy goats. Only 22.3% of farmers had access to the right market information.

"All the milk I produce is sold locally for domestic use and the price is too low. When I want to sell my goats, I have to be assisted by the chairman of the dairy goat breeder's association as there is no ready market locally" - Farmer

Linkage to Government institutions: Only 5.3% of farmers were linked to the government and other institutions for market and informational support.

Dairy Goat Farming Infrastructure. Good Infrastructure is a pre-condition improvement in the development of the livestock sector. Key informants noted gaps in the project design in that the initial dairy goat shelter designs were too standardized without considering the capacity of the farmers to maintain the same.

Shelter: 23.9% of the farmers indicated that the materials for the construction of the shelters were readily available but diminishing timber products were becoming expensive every day. Use of locally available material, that is simple and a less expensive design would have been a better approach.

"I used to have a very good, strong house for my goats, but now I am not able to maintain the house to the required standards due to the cost involved, lack of material. Again I have to pay someone to build it for me since I don't have the skills but I have no money so am waiting for the government to come for my rescue" - Farmer

Only 9% of the farmers were able to maintain their dairy goat shelter to the required standards. Communal breeding infrastructures were not within reach of all farmers. Only 19.1% could access and use the breeding infrastructure.

Markets: Markets are widespread covering long distances. Only 28.2% of the farmers were able to access dairy goat markets with ease.

Transport: Unlike local goats, dairy goats cannot be walked long distances. Transport infrastructure is lacking. As a

result, only 3% of the farmers were able to transport dairy goats correctly.

Policy Recommendations

Short-Term

- Allocate affordable financial resources for dairy goat projects.
- Enhance disease surveillance, monitoring and management
- Improve extension services and access to information
- Strengthen community self-help structures for peer support and access to resources
- Build vibrant market systems and value addition technology for dairy goat products

Medium-Term

- Gender mainstream dairy goat projects
- Support youth to venture into dairy goat farming projects through training and restocking strategies.
- Create a supportive environment for partnerships and collaborations to promote dairy goat projects
- Review of CAP 336, mainstreaming dairy goats and allocation of necessary resources especially during drought.
- Adopt appropriate technology to support key dairy goat's infrastructural development

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Series 1 – Economic Pillar: Financial Services

Role of Financial Capabilities in Harnessing Digital Mobile Payments for Enterprise Success

Grace N. Muraya and Dr Radha Upadhyaya

Key Messages

The important role played by the financial capabilities of entrepreneurs to enhance translation of the benefits of innovative financial products to the success of MSEs. Need for strong consumer protection regulations to ensure no hidden or exploitative charges to increase the quality of financial inclusion.

Context

In Kenya, Micro and Small Enterprises (MSEs) are key engines for growth, creation of employment, innovation, industrial development and GDP growth. The 2016 Kenya National Bureau of Statistics data indicates that this sector accounted for 45 per cent of the establishments and 85 per cent of employment (KNBS, 2016). Despite their great importance, the sector has experienced many challenges and one of them being the exclusion, in terms of access and use, of formal financial products.

Financial capability, the theory in which this study is anchored, proposes that an MSE must have the opportunity to access suitable quality financial products (Storchi and Johnson, 2016). However, it emphasizes that the performance of the MSEs and in turn the well-being of the entrepreneur hinges on the financial capabilities of the entrepreneur to embed the use of financial products. We examine two aspects of financial capabilities in this study: financial literacy and financial behaviour.

While the literature has focussed on the importance of access, and Kenya has made great strides in term of increase in access (Upadhyaya, 2020), research on financial capabilities of entrepreneurs is still scarce (Storchi and Johnson, 2016).

Furthermore, there has been overwhelming attention in the literature to credit products with literature ignoring payment products available to MSEs. This study focuses on one such product, *Lipa na MPesa* that was designed to reduce the over-reliance by MSEs on cash for making and receiving payments. Use of cash has several challenges including loss due to theft, difficulty in tracking, and impulse buying. Therefore, this study focused on the role of capabilities in determining the impact of the use of *Lipa na MPesa* on MSE performance.

Operationalizing Financial Capabilities

This study's key strength was developing a detailed operationalization of the key variable – financial capabilities, ensuring that several attributes of financial capabilities were taken into account. Financial capabilities were operationalized at three levels:

1. Financial Literacy –

- (a) Financial knowledge (know about it) including education, planning, risk identification, contracts, and cash flow management;
- (b) Financial skills (how to experience) including business plan, budgets, standards adherence, credit management, coping with emergencies.

Source: Safaricom Website



2. *Desirable financial behaviour* – (actually doing it) includes investments, savings management, tracking income, timeliness, comparing prices.

3. *Digital payments* – (level of use) including receipts, payments, savings, bank loans, and digital loans.

Further, MSEs success was operationalized as sales volumes, profits, employment, livelihoods, self-assessment.

Approach and Results

This study adopted a mixed methods research design to determine the impact of financial capabilities. The choice of the study area, Starehe Constituency in Nairobi County, was guided by literature which has shown that urban areas have higher adoption of formal financial products. The study began with a mapping of MSEs that use *Lipa na MPesa* establishing a population of 344. A total of 103 MSEs were sampled which was approximately 30% of the mapped population.

The bivariate analysis found out that overall financial capability measure of financial behaviour had the greatest significant correlation to enterprise success. The measures of the capability of financial knowledge, financial skills, and financial behaviour had a significant correlation with the level of use of the digital financial service of *Lipa na MPesa*. There was a significant relationship between financial capabilities and enterprise success at a confidence level of 95%.

Qualitative analysis brought out two key messages. First, enterprise success means different things to different entrepreneurs. To some, it is an increase in sales, profitability, while others cited growth in terms of opening of new branches. However, improvement in livelihoods was considered the most important, with respondents giving examples of being able

to pay school fees for their children. Secondly, the use of *Lipa na MPesa* increased the credit ratings of the enterprises with most respondents saying they can easily access bank loans when they need it. However, it was noted that the uptake of digital loans was very poor. Most respondents said that they only uptake the loans for personal use but not for use in their businesses

Policy Recommendations

Short-Term

- The emerging issues of consumer protection should be urgently addressed. Some of the respondents felt there were hidden costs that the digital payments services make them incur without their knowledge. Improvement in consumer protection will ensure that MSEs continue to increase their use of formal financial products rather than turn to informal products.
- There should be a proper clarification on all the costs implication to all the parties for both the buyers and the sellers so that a person can make an informed decision when using the product.

Medium-Term

- This study revealed that there exists a positive relationship between financial capability and enterprise success. Aspects of financial capabilities should, therefore, be enhanced through awareness creation and capacity building.
- The key variable, financial behaviour, is difficult to influence through training only. A more in-depth case study analysis is therefore needed to understand why some MSEs display positive financial behaviour. The

outcome from the study may lead to policies that enhance their financial capability which is a road to financial inclusion and is theoretically linked to outcomes of increased performance, productivity, and employment. This will lead to the increased success of the MSEs which play a very critical role in the Kenyan economy.

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Series 1 – Economic Pillar: Agriculture and Livestock

Improved Sorghum Variety: A Forgotten Gold in the Kenya Drylands

Dr Evans L. Chimoita

Key Messages

Improved sorghum adoption, production, commercialization and utilization offer a golden opportunity for food security among drylands inhabitants.

Sorghum avails nutritional products through value addition and processing.

Contract farming can stimulate farmers' uptake and increase land acreage under investment and production of improved sorghum.

Devolved units and national the government should invest in the sorghum value chain by strengthening the extension systems and inputs support services.

Source: Author

Context

Statement of the Problem

Agricultural extension and technology transfer services play a vital role in disseminating research knowledge, skills and income-generating strategies among the farming communities in Kenya. However, there exists a disconnect between the amount of information and technologies developed in research centres and what is implemented by farmers. Further, improved technologies are not reaching farmers for utilization as a result of weak linkages between the government's extension providers, that are charged with the responsibility of ensuring that the technologies transfer, and the farmers for utilization.

Moreover, the effectiveness of the Government of Kenya extension sector service provision has greatly declined during the last decade due to structural adjustment programmes (SAPs) and liberalization policies. The sector further faces constraints such as reduced and aged extension staff, low funding for operations and maintenance services, leading to weak information dissemination networks.

Interventions

Documented evidence shows that there exist improved technologies in the research institutions on the minor crops in Kenya and worldwide, (ICRISAT 2006). For instance, the Kenya Agricultural Livestock and Livestock Research Organization (KALRO), in collaboration with International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), have developed and released numerous improved sorghum varieties suitable for arid and semi-arid regions of Kenya. Further exists a contract farming as the latest intervention for stimulating farmers' uptake and confidence in investing and production of improved sorghum.

Improved sorghum varieties present great potential for food and nutrition security as well as improved livelihood among 750 rural households in the semi-arid regions of Kenya (Sekoli and Morojele, 2016). According to Chimoita et al. (2017), the market outlets for improved sorghum products include contract market by East Africa Brewery Limited agents (48%), local markets (42%), farmers' organizations (5%), and others (4%) including the National Cereals and Produce Board.

The improved sorghum production avails enormous income generation avenues and nutritional products through value addition and processing of products such as porridge, cookies, sorghum-millet ugali and beer, and other products including



animal feeds, manure and bio-fuel (Kenya Vision 2030, 2007; MoA, 2010).

Issues

Despite numerous benefits accruing from improved sorghum products and enormous research efforts done in the past, the adoption, production, commercialization and utilization of sorghum products as staple food remains low in Kenya. The low uptake of improved sorghum varieties is attributed to limited extension services provision especially on availability and reliability of quality seeds, market outlets, and limited policy documentation (Chimoita et al. 2017).

If such challenges are not addressed, then it will not be possible to achieve the government's food and nutrition security agenda that is among the big four agenda for communities living in arid and semi-arid areas.

Approach and Results

The study, conducted in arid Mbeere North Sub-County, Embu County, employed a descriptive survey design suitable for describing information, data, events, perceptions and issues. Further, the study purposively selected 51 out of 101 agents from national and county government Ministry of Agriculture engaged in the improved sorghum value chain. Data on the extension agent's gender, work station, education level, experience, telephone technologies, demonstrations, ASK shows, market outlets and radio techniques were collected from lead farmers, private and extension agents located in Njura, Kangai, Njarange and Kiambungu villages within Mbeere North Sub-County, Embu county.

The study results revealed that 65% of improved sorghum farmers were literate while the extension agents working with sorghum farmers had acquired over twelve years of work experience disseminating various agricultural technologies. The agents disseminated technologies by embracing farm visits, demonstrations, and agricultural shows visits and through radio

technologies. Further, the extension agents work experience greatly influenced the uptake of improved sorghum technologies by farmers. It was concluded that agricultural shows complemented agents' efforts in linking farmers to contract market agents such as East Africa Brewery Limited (EABL).

EABL contract arrangement was recommended as a suitable intervention for stimulating uptake and increasing farmers' confidence in investing and production of improved sorghum. For instance, farmers contracted by EABL have demonstrated exponential trendy yields achievement from 15 tonnes in 2014 to 60 tonnes in 2018 (EAML, 2018) with a kilogram price of sorghum going for KES 23 in 2014 and KES 37 KES in 2018.

Policy Recommendations

Short-Term

- Immediate need for farmers' sensitization on contract farming, through training on the modern contract farming arrangements
- Enhanced uptake and implementation of improved sorghum technologies by farmers can be achieved through farm demonstrations, mobile phone text technologies and empowered extension agents.
- Rapid support from devolved county and national governments through capacity building sessions to farmers and extension agents.

Medium-Term

- Devolved units have the opportunity to enhance the rapid promotion of improved sorghum production by encouraging farmers in allocating enough land, sensitizing farmers on the importance of modern contract farming that stimulates rapid uptake and production of improved sorghum

technologies among farmers because of guaranteed market outlet

- County governments should invest more in strengthening their extension systems.

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Series 2 – Social Pillar: Environment, Water, Sanitation and Regional Development

Revisiting Kenya's Ban on Plastic Carrier Bags

Elmah O. Geoffrey and Dr Jane M. Mutune

Key Messages

Revitalize the sisal and cotton industry to provide eco-friendly alternatives and create employment.

NEMA should provide sound waste management strategies that promote a circular model of economy which encourages waste recovery.

Reduction/removal of taxes on all imports that are aimed at providing healthy and eco-friendly alternatives to the plastics.

Integrate public awareness and sensitization sustainable and responsibly consumption through environmental education in national and county development plans.

Source: Author

Context

Plastic waste is one of Nairobi's and to a greater extent Kenya's most visible environmental problems, with most of the flooding witnessed in cities attributed to plastic waste that clogs drainage systems, key among them are plastic carrier bags. These are lightweight non-biodegradable materials that take ages to decompose. They reduce the aesthetic value of both the natural and physical environment and have since proven to have negative impacts on marine life, livestock and human beings. It is estimated that in their lifetime, livestock ingest an average of 2.5 kgs of plastics and this has been attributed to losses in the meat industry.

UNEP (2018) reports that between 60% to 80% of waste in the oceans is made of plastics. Also, about 275 metric tonnes of waste generated across 192 coastal countries is made of plastics. Plastic waste generated continued to significantly increase. In 2015, it is estimated that 300 million tonnes of plastic waste were generated. These worrying statistics have got the attention of most governments. According to UNEP, at least 60 nations have banned single-use plastics while others have employed measures that include market-based approaches (levies/tax) and public-private agreements to help reduce the consumption of the material. In these nations, 50% of them have little to report

since most of them enforced the ban recently and there is poor enforcement.

Kenya introduced the ban through Gazette notice No. 2356 in 2017. At the time of introduction, about 1 million plastic bags were consumed annually in supermarkets alone. Nairobi City County generates over 2,400 tonnes of waste daily and has alluded to their inability to manage the waste which mostly consists of food and plastics. Half the waste goes to the Dandora dumpsite while the remaining waste is either illegally dumped or left uncollected.

Nations must strive to produce and consume sustainably in an environment that is clean and healthy. Governance effectiveness is measured when regulatory systems can meet policy needs. More than two years after the ban in Kenya, plastic carrier bags are still in circulation..

Study Approach and Results

A cross-sectional study was employed with surveys of a sample of 106 small scale traders (butchers, grocers, vendors and retailers) in Karen and Kibera most affected by the ban. The aim was to get a comparative overview of how compliance with the ban was taking shape one year after it took effect.

The response of stakeholders towards a given piece of legislation determines how effective the legislation will be complied with. In Kibera, 57% of the traders responded that the ban was not necessary



and 30% in Karen. However, a majority of respondents (44%) from Karen were conflicting, responding yes and no. They acknowledged the benefit as their environment becomes clean day by day, but they were also making huge losses due to lack of better alternatives.

A majority of Kibera traders report that apart from the business being difficult, the physical environment is still dirty despite the ban being intended to make it cleaner. At least 60% of traders interviewed lamented that there were no clear alternatives and so the ban should not have taken effect in the first place. The lack of clear alternatives to the banned plastic bags has proven to be a threat to nations that have banned plastic bags in the quest to achieve full compliance.

This study established that 70% of the respondents were not personally consulted before the ban took effect. The 30% that were consulted indicated that they heard about the ban through television and radio. Also, there no forum was called to brief them on the ban. Half of the traders reported that they are not aware of which plastics were banned and so the difficulty in complying with the ban.

As some traders switched to other businesses, others looked for ways to access the banned plastics through porous borders from neighbouring countries. "What surprise me is that they banned plastic in Kenya but we're being sold to the banned plastics from Uganda, so it's like we're building the economy of Uganda than our own" – lamented a trader from Makina. A study was done in Ireland (Anastasio and Nix, 2016) established that while Ireland was introducing a levy on plastic bags, they omitted small bags used in separating fresh produce such as meat, fruits and vegetables as a result of a public outcry from the butchers.

A vendor in Kibera points out that since she does not want to lose customers, she ensures the customer is satisfied, "If my customer comes with a container, I serve them the goods they want in them, however, if he or she does not have and since I do not want to lose money, I use the banned plastic bags."

Available Alternatives and their Health Implications

The right to clean and healthy environment in which the Gazette Notice No. 2356 was hinged talks about the safety

of the environment and human beings. The lack of affordable, healthy and eco-friendly alternatives to the plastic bags has since proven to be a threat in the quest to eliminate plastics. Traders report that since the plastic carrier bags ban took effect, it has not been easy doing business. The blame is put on the lack of suitable alternatives to banned plastic bags. The non-woven reusable bags seem to be the typical alternatives, however, they could pose greater health risks by exposing consumers to bacteria if not cleaned. Used newspapers and other paper materials used in packaging could also expose consumers to dangerous chemicals detrimental to human health.

Conclusions

Kenya's ban on plastic carrier bags is one of the greatest things to happen in a developing nation with the desire to ensure environmental sustainability. Not only has it tamed the habits of consumers, but has also proven to be a step forward in ensuring that there is a clean and healthy environment as provided for by Article 42 of the Constitution 2010. This study finds that the ban was not necessary: the problem of plastic waste is human-made and hence the solution lies with humans and not the plastics. Nations that have embraced recycling and invested heavily in ensuring a sustainable environment consume fewer plastics and can manage the plastics they do use.

There was a difference in compliance between Karen and Kibera traders (60% and 30%, respectively). Compliance to plastic ban had picked up slowly occasioned by limited sensitization of the public on the ban, therefore public involvement is an important prerequisite for a successful implementation. .

Policy Recommendations

Short-Term

- Removal of taxes on all imports that are meant to provide affordable and healthy alternatives to traders and consumers.
- There is a need for a robust public awareness and sensitization of sustainable and responsible

consumption. For example, environmental education should be introduced in the school curriculum.

- Increasing environmental communication in media platforms, industries, offices and along the streets geared towards conservation, for example, using billboards.
- Encouraging citizens and stakeholders to adopt streets and roads, taking responsibility for their cleanliness.

Medium-Term

- Allocation of funding to recycling sector where all used plastics could be recycled to prevent them from getting into the environment
- Provision of sound waste management strategies by NEMA that will communicate waste recovery to the stakeholders
- Reviving the sisal and cotton industry as a way of providing healthy alternatives and offer jobs as part of the government's Big Four Agenda
- Introduce weekly clean-ups where a day is selected within the week and the business closes from 6 am to 9 am for cleaning purposes before operations resume.

Acknowledgements

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Series 2 – Social Pillar: Health

Policy Implementation and Performance of HIV Prevention Projects

Anthony Ndungu and Prof. Harriet Kidombo

Key Messages

Improving Health Systems to Meet Adolescents' Health Needs.

The government and stakeholders to establish localised monitoring systems for compliance with existing policies.

There is a need to address gender equality in adolescents health programming.

Context

According to the most recent data from government agencies and media reports on the sexual escapades and drug and alcohol abuse by Kenyan youths, it is evident that teenagers are faced with major challenges that require urgent attention. Failure to address these concerns may position Kenya in an irredeemable state with a lost generation. According to the World Health Organization (WHO), adolescents are young people aged between 10 and 19 years. As it was underscored during this research this population is often forgotten in development discussions where more emphasis may be placed on children and youth in general.

Adolescents comprise 24% of Kenya's population. This large population has implications on the country's health and development agenda and is likely to place increasing demands on the provision of services. There is little doubt that a large population of healthy, well-educated and fully empowered adolescents is a valuable national asset and, indeed, one of the key ingredients for the achievement of the demographic dividend. However, if we reflect upon the situation in Kenya today, adolescents are one of the most vulnerable sub-populations. The lack of monitoring, learning and evaluation mechanisms for programmes aimed at benefiting young people has been a barrier to effective implementation of interventions.

Despite advancements for adolescent and youth sexual and reproductive health (SRH) programmes, the latest data indicate a persistent high need for services. For example, more than 25% of young women are married by 18, increasing their likelihood of having children at an early age. Nearly 33% of young married women have an unmet need for family planning, meaning they wish to delay childbearing, but are not using any method of contraception, and are at risk for having an unintended pregnancy.

Good health and other physical, moral, and intellectual development outcomes are often mutually reinforcing. For example, healthy children do better in school. Similarly, having more years of schooling provides essential information and skills that are linked to more protective and less risky behaviours. There is also strong evidence that peers and parents are influential in shaping gender norms and attitudes. There is some evidence that schools and teachers also shape norms and attitudes. Evidence on the influence of the media is beginning to emerge.

This study focused on understanding and proposing solutions to improved implementation of health promotion projects targeting adolescents in Kenya.

Approach and Results

A mixed-mode approach was used to investigate both quantitative and qualitative aspects of the performance of HIV prevention among adolescents projects in Kisumu County. The focus was on the

Photo: Allan Nyima/Pixabay.com



policy implementation process from both the project implementation and the stakeholders' perspective to draw important lessons for the on projects' implementation.

A sample of 354 respondents was drawn from four different organizations implementing HIV prevention projects in Kisumu County. They included primary beneficiaries (adolescents enrolled in the projects), project managers/officers, M&E managers/officers, policy regulators and social protection officers from the children's department. Questionnaires were utilized as core instruments of data collection. Data used in this research was collected between July 2018 and October 2018.

Using Pearson's Product Moment Correlation, the study found a strong correlation between the policy implementation process and the performance of the HIV prevention projects, with a correlation coefficient, $r=0.541$. This can be translated as the policy implementation process accounted for 54.1% variance in the performance of the sampled projects. A unit improvement in policy implementation, therefore, translate in a similar percentage improvement in the performance of the project. .

Policy Recommendations

Short-Term

- Projects should include a component advocating for the formulation of the necessary policies through the involvement of key stakeholders who

will also ensure that the policies are implemented within the scope of the project.

- Projects should develop the necessary monitoring tools to capture and track policy implementation, for example, utilization of standard curricula for training and standard operating procedures in the provision of biomedical services.
- Project management teams should introduce the necessary provisions to provide technical assistance to the field teams. It was noted that there were major knowledge gaps.

Medium-Term

- The shortcomings of health systems in Kenya are well known, and adolescents, in particular, would benefit from their improvement through strengthening human resource capacities in health facilities and strengthening the stewardship oversight function of county governments.
- Monitoring of policy implementation should be devolved to ward level from current data capture at the county level. The entry of data at the lowest level will allow real-time data updates during programme implementation.
- Facilitate the research and development agenda by documenting the effectiveness of current approaches, testing new interventions and enhancing understanding of the risk and protective factors influencing young people's behaviour.

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Series 2 – Social Pillar: Environment, Water, Sanitation and Regional Development

Key Fire Disaster Prevention Factors in Informal Settlements in Nairobi

Dr Samuel Mwituria Maina and Prof. Peter M. Ngau

Key Messages

*Deploy essential infrastructure services,
Build capacity in fire response mechanisms, and
Practice inclusive urban development and governance*

Context

Rapid and haphazard urban development has often placed homes dangerously close together. When fires start, they often spread easily and quickly. Given the density of many of these settlements, evacuations are chaotic and dangerous. Pathways between homes are narrow and often blocked, and first responders are often unable to access homes in time (Ngau, 2018).

It is estimated that over 65% of Nairobi's population reside in the over 180 informal settlements which are characterized by poverty, substandard housing, extreme crowding, and lack of basic services such as sanitation, water, lighting (Twigg et al., 2000). Nairobi's informal settlements experience frequent fire outbreaks leading to loss of life, serious injury, and loss of assets and livelihoods (DREF, 2011). The combination of poverty, marginality, overcrowding and limited service provision exposes residents of informal settlements to a wide range of hazards particularly fires and disease outbreak.

Available literature that primarily comes from accounts of non-governmental organizations and volunteer emergency/humanitarian relief agencies as well as case studies of research conducted in universities covers three broad areas of interest: fire incidences with a focus on occurrences, risk and vulnerability of the communities in the informal settlements; fire management with a focus on policy, infrastructure and equipment in place to combat fire outbreaks; and fire response which mainly examine the nature of the

response by the communities and others towards fire outbreaks (Ngau, 2018).

About the Study

The study aimed to examine the dynamics of fire disaster, vulnerability and response in the informal settlements in Nairobi using a case study of Mukuru Fuata Nyayo, a constellation of informal settlements lying in the southern side of the city. In Kenya, there is no systematic record by government and city authorities on fires in informal settlements. There are often sporadic and conflicting reports on fire occurrence by diverse organizations and agencies, including the Kenya Red Cross Society (KRCS), the United Nations Office of the Coordination of Humanitarian Affairs (UN-OCHA) and the Kenya National Disaster Operations Centre (NDOC).

For example, for the period between January and March 2011, KRCS reported that approximately 42 fire incidences occurred resulting in at least 11 fatalities and about 472 casualties in Nairobi's informal settlements (KRCS, 2015). For the same period, UN-OCHA reported that 71 fires occurred in Nairobi resulting in loss of 2,016 jobs, 376 houses, 2 deaths, 11 casualties and asset loss above US\$ 1 million (UN-OCHA, 2011).

Response to Fire in the Informal Settlements by Communities

There are two aspects of community fire disaster response in informal settlements – during and after the occurrence of the

Image: Authors



disaster. The first aspect concerns how the communities react during the fire incidence, while the second aspect concerns how the communities cope after the fire occurrence. There are limited account and knowledge on the first aspect, with substantial literature on the second.

Study Results

Response to Fires: The Changing Landscape

Initially, community members used to watch the fire raze down everything in the village, instead of engaging in fire fighting, according to Cyrus Wandeto from Mariguini village. There is currently a sense of oneness. The residents have a collective approach to respond to fire outbreaks where the first response is to collectively put out the fire before it spreads. In earlier years, the residents simply stayed put and watched properties get destroyed and then wait for landlords to rebuild the houses. Wandeto gave an account of an earlier experience in 1988-89 when a fire broke out in Commercial Village. People salvaged property and stood by watching the fire burn everything in the village.

Today, the tale is different. Residents are quick to mobilize and have the situation under control. The residents suggested that it would be a good idea to have a container of fire fighting equipment in the open spaces within the settlement and that the people would collectively take care of the equipment, though one person should be tasked with the responsibility of taking the day to daycare of the equipment. The cover figure shows the proposed improved system of fire response in the informal settlements.

Factors to Consider for Improved Fire Response

An analysis of community views brought out key factors needed to improve and capacitate the current community response mechanisms through training, facilitation and provision of equipment and tools. The key factors showed that response mechanisms should be:

User Friendly: The mechanisms should be simple enough to be employed and replicated in the informal settlement. The less complex the systems are the better as individuals can easily catch on and train others.

Ease of maintenance and sustenance: Mechanisms to be used should be simple in maintenance and sustenance and designed to minimize vandalism and cases of neglect. Complex systems and tools tend to be abandoned more often than simpler ones.

Integration into daily use: The most effective systems in informal settlements are those that are assimilated into daily use. This promotes the security equipment and improvement of skills. Tools that are not incorporated in daily use end up being forgotten/lost, vandalized etc.

Cost-effective: The area of implementation is a low-income neighbourhood. Therefore, the affordability of the tools is paramount in cases where the community has to contribute. In instances where tools and processes are to be funded by external actors, the cost is still put into consideration as the tools, both soft and hard, should be cheap for better wide implementation.

Promotion of livelihood: This should include an aspect of the development of livelihoods and economic empowerment of individuals. This increases the lifetime of the tools as the added benefits act as an incentive to the community members to maintain and sustain the tools and equipment..

Policy Recommendations

Short-Term

- Deploy essential infrastructure services, including installation of a communication system that reaches the masses possibly through a portable public address system and a bulk messaging system; and placement of firefighting boxes with

basic firefighting equipment such as whistles, fire extinguishers, demolition tools as are needed at the neighbourhood level.

- Build capacity in fire response mechanisms. For example, a group of resident youth from the settlement from different villages should be identified and trained as first responders.

Medium-Term

- Practice inclusive urban development and governance. The informal settlements require some level of development control by the local leaders with all new structures following set guidelines.

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Series 2 – Social Pillar: Health

Patients with Chronic Kidney Disease: How Can They Make Informed Nutritional Decisions?

Dr Rose O. Opiyo, Dr Anthony Were, Dr Esther Nabakwe, Alexander Mbogo, Prof. Joyce Olenja, Zipporah Bukania

Key Messages

The Ministry of Health and partners should develop national standard operating procedures and IEC materials in renal nutrition counselling for harmonized messages.

All patients with chronic kidney disease should get takeaway information leaflets with patient-specific simple nutrition messages to ensure the accuracy of nutrition information;

All nutritionists and healthcare workers in renal units should participate in regular continuing nutrition education on most recent evidence-based nutrition information.

Image: piixabay.com

Context

In chronic kidney disease (CKD), the kidney's functions of removal of waste product from the body are gradually impaired, causing the death of over 2.4 million people globally (International Society of Nephrology, 2018). The existing therapy for CKD is either dialysis or kidney transplant alongside modification of lifestyle behaviours. Successful dialysis therapy for patients with CKD requires adherence to diet prescriptions to avoid further accumulation of waste products in the blood and development of infections (Campbell & Rossi, 2014; Rysz, Franczyk, Ciałkowska-Rysz, & Gluba-Brzózka, 2017).

Although diet is one of the most modifiable lifestyle factors in the management of patients with CKD, adherence to dietary prescriptions is a challenge for most patients (Herselman, 2008). There is limited accessible documented information, particularly in Sub-Saharan Africa on CKD (Stanifer et al., 2014; Yang et al., 2020). Additionally, the reasons why patients with CKD on hemodialysis and their family caregivers fail to adhere to the diet prescriptions in the African context are not clearly understood.

In our study, we attempted to examine adherence to diet prescriptions among adult patients with CKD on hemodialysis at the national teaching and referral hospitals in Kenya.

Approach and Results

This policy brief is based on data from a cross-sectional mixed-method study that employed both qualitative and quantitative data collection approaches among adult patients with CKD undergoing haemodialysis and their family caregivers. The study was conducted at renal clinics and wards in Kenyatta National Hospital and Moi Teaching and Referral Hospital in Kenya. The research findings were triangulated with key stakeholders groups. To our knowledge, this was the first study in Kenya on adherence to diet prescriptions among adult patients with CKD on hemodialysis.

About 64% of patients with CKD on hemodialysis at the national referral hospitals in Kenya did not adhere to their diet prescriptions. This implied that three out of every five adult patients with CKD on hemodialysis were at risk of disease complications and death due to non-adherence to prescribed diets. For the patients who found the diet prescriptions unattainable, it was challenging for them to implement the diets as prescribed (Adjusted odds ratio: 0.24, 95% confidence interval: 0.13 – 0.46, $P < 0.001$). Additionally, those who considered the diet prescriptions as flexible and in harmony with their routine feeding practices were almost three times more likely to follow the diet prescriptions compared to those who considered the diets to be restrictive (Adjusted odds ratio: 2.65, 95% confidence interval: 1.11 – 6.30, $P = 0.028$).

Among the reported problems that hindered the patients and caregivers from adhering to their diet prescriptions in this



study was the mixed and, sometimes, confusing nutrition information which led to dietary intake based on inaccurate nutrition information. This finding suggests that patients lack harmonized nutritional guidance; hence, they make uninformed decisions concerning their dietary intake. This contributes to the consumption of unhealthy foods which only negate the effects of dialysis, thereby increasing the risk of death of these patients as well as undermining the efforts of the healthcare system in the management of patients with CKD.

Current State of Nutrition Counselling for patients with CKD

In Kenya, nutrition counselling for patients with CKD is currently guided by the National Clinical Nutrition and Dietetics Reference Manual (GoK, 2010), and in some facilities, facility-based clinical nutrition manuals and protocols. However, some of the recommended diets are based on international clinical nutrition guidelines. The patients in Kenya, particularly those from rural or resource-constrained urban households may, however, find food items suggested in these guidelines unsuitable or inaccessible. Although the Ministry of Health launched the updated Kenya National Food Composition Tables (FAO/GoK, 2018) based on locally available foods in 2019, most nutritionists at health facility level have not been trained on the use of this resource in diet prescriptions.

Policy Recommendations

Short-Term

- The Ministry of Health (MOH) and partners should develop a national standardized nutrition protocols based on kidney disease staging, the existing and emerging co-morbidities, type of replacement therapies for paediatrics and adults, as well as locally available foods and resources
- MOH and partners should support the development of national standard operating procedures and IEC materials including take-away information leaflets with patient-specific simple renal nutrition messages for patients with

CKD to ensure harmonized message delivery based on current evidence-based clinical nutrition and sustainability of individualized nutritional care;

- All nutritionists and dieticians in health facilities with dialysis services and renal clinics should receive a specialized training package on renal nutrition and participate in regular continuing nutrition education to deliver a harmonized package of quality nutrition care to renal patients.

Medium-Term

- The health facilities that have nutrition protocols should ensure that these documents are regularly updated based on the national clinical nutrition guidelines, existing and emerging co-morbidities as well as locally available foods and resources. The facilities without such protocols should make efforts to develop them.
- Healthcare workers in renal units should ensure that they possess the basic knowledge of renal diets and always refer the patient to the nutritionist/dietician for individualized nutrition counselling.
- MOH should promote renal nutrition research and establishment of renal nutrition research grants and global funding networks.

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Series 2 – Social Pillar: Environment, Water, Sanitation and Regional Development

Replenish Millions of Kenyan Household's Granaries Through Forest Restoration

Jane Mutune

Key Messages

Involve Community Forest Association (CFA) members in decision making over forest resources.

Invest in capacity building of CFA members on leadership, accountability and transparency.

Invest in alternative nature-based income-generating activities to ease financial constraints and enhance forest restoration.

Operationalize the CFA user groups to incentivize community participation in forest conservation.

Context

Deforestation is estimated to have deprived Kenya's economy of Kshs. 5.8 billion (US\$68 million) in 2010 and Kshs. 6.6 billion in 2009, far outstripping the roughly Kshs. 1.3 billion earned from forestry and logging each year (UNEP, 2012). Kenya has a forest cover of 7.4 per cent of its land area, compared to around 12 per cent 50 years ago. The Kenya Forestry Working Group has estimated that Kenya will lose US\$300 million each year through deforestation. Deforestation and Forest Degradation (DFD) results in loss of livelihoods and climate change. In Kenya, about 15 million tons of carbon dioxide is lost annually through DFD and poor forest governance and management.

In Kenya, agriculture feeds both rural and urban populations. The forest ecosystems are core to both the agricultural and food system. Forests provide various ecosystem services which include water, climate regulation, soil erosion control, pest, diseases and frost regulation, key ingredients to foods security of the 47 million Kenyans. Between 2000 and 2010, an estimated 28,427 hectares of forest were lost in key water towers leading to reduced water availability and increased carbon emissions. For instance, low volumes of water and frequent drying of Mara River occasioned by the destruction of the Mau

forest complex has exacerbated the vulnerability of the Mara ecosystem. The degradation of the Mau forest complex has a direct impact on the reduction the tourism, an industry which contributes about 3.7 per cent of GDP (2017). Besides, pastoralists based in the Mara River Basin lost 35 per cent of their livestock due to drought.

Forest degradation has also triggered the scarcity of resources and resulted in conflicts between government and Community Forest Associations (CFAs). Recent conflicts have been witnessed at the Maasai Mau, Cheregani and Mt. Elgon forests. Further, forest destruction precariously exposes women and girls as they walk long distances to fetch fuelwood. About 82 per cent of households use fuelwood for cooking and 1.2 per cent for lighting (KIHBS, 2017). However, Kenya is only able to meet about 70 per cent of this demand through sustainable domestic supply. The annual deficit of 12 million cubic meters is met by formal and informal imports plus unsustainable extraction from natural forests (KIHBS, 2017). The situation can be reversed through forest restoration and meaningful involvement of the CFAs in forest co-management.

Approach and Results

The Forest Conservation and Management Act (2016) provides the basis for a new perspective on forest ecosystems

Image: Mt. Kenya Forest (Magical Kenya)



management for improved forest conditions and livelihoods. Community participation in forest management is paramount in addressing climate change challenges, rehabilitation and restoration of forest resources. Participation of CFA members needs incentives and technical support mostly from the Kenya Forest Service (KFS) and external programs. Currently, the CFA members are mostly involved by KFS in providing labour in forest-related activities like shamba system, aftercare of tree seedlings and scouting which are paramount for forest conservation but have minimal tangible benefits to communities and without a clear benefit-sharing mechanism.

Usually, CFAs have lamented exclusion by KFS from decision making over forest resources. Yet the involvement of CFAs in decision making and gainful nature-based income-generating activities, for example, farm forestry, beekeeping, ecotourism are useful means through which CFAs can increase their livelihoods while enhancing the capacity of forest ecosystems to produce goods and services. For instance, meaningful involvement of CFA members can restore key water towers like the Mau Forest Complex whose total economic value (TEV) is Kshs. 110 billion (GoK, 2009). Its TEV can fund the 120 km of the Nairobi- Naivasha SGR line whose total construction cost is estimated at Sh153 billion.

When CFA members are given complete autonomy and devolution of power, CFAs can become viable local institutions for sustaining forests. When managed sustainably forests have the potential to absorb about one-tenth of global carbon emissions. If we halt deforestation and forest degradation and forest restored then we could reduce emissions by 9 gigatons of carbon dioxide per year by 2030 (Miles and Sonwa, 2015)

Moreover, the widely accepted principles of good governance such as accountability, transparency and rule of law, which have been lacking in centralized

forest management regime could be largely present, effective and having a strong influence on CFAs functioning for sustainable management of forest resources.

Therefore, there is a need for stronger efforts to ensure better functioning of the CFAs. That is, for the CFAs to become responsive in forest conservation, further decentralization of decision making and autonomy are believed to be an important step forward here as part of the current problems, especially lack of interest in the CFAs, relates to lack of real decision-making power. This may involve efforts to ensure capacity building of CFAs members and tangible benefits through value addition on forest products.

Policy Recommendations

Short-Term

- There should be a clear benefit-sharing mechanism between the KFS and CFAs, giving communities incentives to participate in forest management and enhance ownership for sustainability
- There is need for capacity building on leadership and good governance among CFAs.
- The Community Forest Association Members should be actively involved in decision making related to forest management and governance.

Medium-Term

- The community forest user groups should be operationalized.
- The KFS and CFAs should restore the degraded forests and water towers, as a pathway to reduce emissions from deforestation and forest degradation.
- The government should undertake a total economic valuation of water towers which is currently not known.

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Series F – Foundations : Ending Drought Emergencies

Drastic Massive Loss of Women's Diets Diversity Due to Changes in Season

Sophie Ngala and Dasel Mulwa Kaindi

Key Messages

Support establishment of kitchen gardening and keeping of small livestock to increase food variety for pregnant women.

Every pregnant woman be given individual counselling on the consumption of a varied diet.

Introduce mobile outreach antenatal clinics in all counties to improve coverage of counselling on diversified diet

Support development of digital tracking systems for antenatal clinics defaulters.

Context

Most causes of women's nutritional problems are preventable. Lack of variety, poor quality, and sufficient food during pregnancy are important factors contributing to the health problems of expectant mothers and newborn children. This exposes women to risk for anaemia, hypertension, miscarriages, stillbirths, gestational diabetes, pre-term delivery and/or even loss of the mother. Ignorance and lack of comprehensive guiding information during antenatal and postnatal clinics are responsible for the failure of observing life-saving eating habits by expectant mothers.

The ten food groups proposed to be eaten daily by women of reproductive age (FAO and FHI, 2016). Women should eat at least 5 out of 10 of the following food groups daily: (a) grains, white roots and tubers, and plantains; (b) pulses (beans, peas and lentils), (c) nuts and seeds, (d) dairy, (e) meat, poultry and fish, (f) eggs, (g) dark green leafy vegetables, (h) other Vitamin A rich fruits and vegetables, (i) other vegetables, and (j) other fruits.

A varied diet rich in essential nutrients is vital for the proper growth of the developing fetus and leads to full-term births of healthy babies. Consuming different types of foods rich in essential nutrients help build the body, fight diseases and provide vital energy for optimal body growth and function.

Dietary intake for different seasons

A study was done in Mbooni Division, Makueni District, during two seasons, pre-harvest (n=73) and post-harvest (n=203) (Ngala, 2015). Non-lactating and non-pregnant women who had children aged between 2-5 years were the respondents concerning household dietary diversity in the two seasons. The diversity of women's diet tends to decrease from 5 to 4 food groups during seasonal change. Even though the energy intake increased slightly after harvesting from an average of 2,039 Kilo Calories (kCal) to 2,097 kCal, the nutrient adequacy of the diet was unacceptable.

The food groups mostly eaten by women, irrespective of the season, were starchy staples, vitamin C-rich vegetables, vitamin A-rich dark green leafy vegetables, all other fruits and vegetables, and legumes and nuts (Figure 1). Vitamin A-rich dark green leafy vegetables and all other fruits and vegetables are significantly not available for women's consumption after harvest. Also, dairy intake is very low as women primarily consume through very minute quantities in tea.

Useful Strategies to Reverse the Situation

Women of childbearing age need to consume different types of foods that provide all the major nutrients required for optimal growth and body functioning to



improve birth survival rates and increase the proportion of normal weight births.

At the clinic, counselling should start by interrogating the diet history of mothers to reveal their dietary diversity. Pregnant women should be counselled on what a diverse diet constitutes especially the 10 food groups. Where poor diets are identified, specific action should be taken. The knowledge of the need to consume a varied diet will create a demand for food production for home consumption. Therefore, women should also be encouraged to have kitchen gardens and rear small animals to ensure availability of essential foods and improve vital nutrition.

Women's visits to antenatal clinics are poor (Riang'a et al., 2017, Perumal, et al, 2013). Two-thirds of the pregnant women made one ante-natal clinic (ANC) visit. The Kenya Ministry of Health (MOH) recommends four visits, while the World Health Organization recommends eight ANC visits to ensure that women have all the right information, continuous monitoring and follow up (FAO and FHI 360,2016).

At the antenatal clinics it was found that as women wait to be attended, nurses (not nutritionists/dietitians) gave group talks to women on various issues, though their busy schedules did not allow regular talks (Perumal, et al., 2013). The pregnant woman:nurse ratio was also high, preventing individualized counselling. Further, the contents of the talks given to the pregnant women had not been formally reviewed, standardized and made into a curriculum. Besides, consumption of a varied diet was not being communicated to the women at the ANC.

Women were found to eat a low number of different food groups for the following reasons (Ngala, 2015):

1. Consumption of starchy staples with very little vegetables/fruits and animal source foods.
2. Very few women snack in between meals. even when pregnant.
3. In Kenya, there is no policy on how to determine the macro/micronutrient adequacy in the diets of women, including pregnant women.
4. Food consumption patterns remain the same even as the seasons change. Little advantage is taken of foods in season.

Other studies have found that:

1. The women are inhibited by cultural myths, taboos and practices some of which are guided by ignorance (Riang'a et al., 2017).
2. Lacking knowledge of what alternatives foods to buy when their purchase power is poor and still consume nutritious diets (de Sande, 2017; Best Start, 2003).
3. Some women are encouraged to eat very little food and a limited range of food groups to prevent the fetus from growing too big, thus avoiding cesarean sections (Riang' an et al., 2017).
4. Inadequate contact with ANCs, where pregnant women could get information

on the consumption of diverse diets (Perumal, et al., 2013).

Policy Recommendations

Short-Term

- Agricultural extension officers/ development partners to support the women with the establishment of kitchen gardening/keeping of small livestock to supplement their food sources to ensure availability of essential foods
- MOH to develop fliers and information sheets on important foods essential for the health of the mother and baby and to encourage behaviour change.
- MOH to develop a programme to use ANCs as intervening points for counselling pregnant women on important food groups to be included in their daily diet.
- A guideline often important food groups, with a minimum of five food groups recommended per day, should be prepared and availed at all ANCs.
- MOH to recommend at least four compulsory visits to ANCs for expecting mothers.

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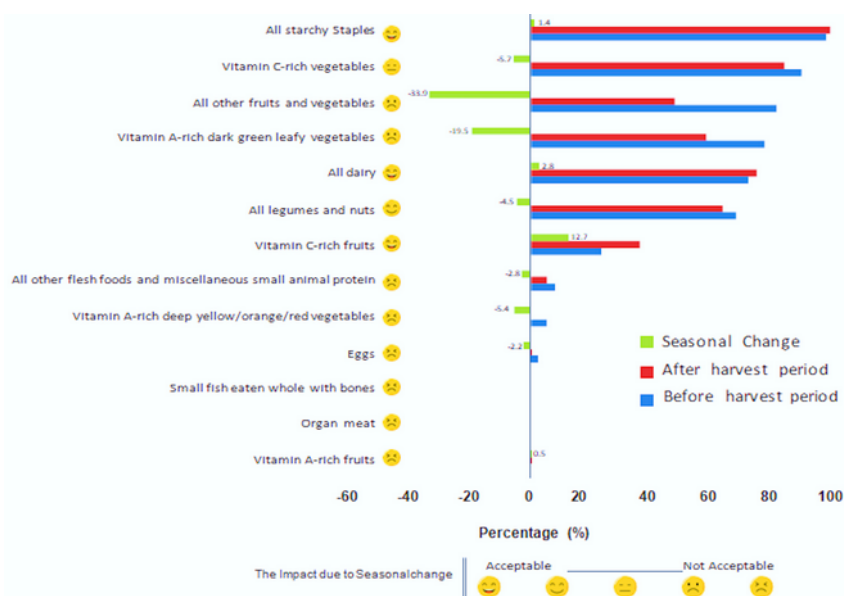
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Figure 1: Loss of dietary diversity of the diet as a result of seasonal change (Modified from Ngala, 2015)



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