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Title: THE MANDERA GREENING PROGRAMME

County:	MANDERA		
Sector/s:	MANDERA MUNICIPALITY	Sub-sector/Theme:	ENVIRONMENT
Keywords: (for search in the online platform)	GREENING PROGRAM, ENVIRONMENT, MANDERA COUNTY, MANDERA MUNICIPALITY, LIVELIHOOD, WOMEN EMPOWERMENT		
Target Audience:			
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Resource Persons (include their designations)	H.E. Mohamed Adan Khalif, Governor – Mandera County Mr Mohamed Ali Omar, CECM – Water, Energy, Environment and Climate Change.		

Introduction (Context and Challenge): This should provide the context of and justification for the practice, and address the following issues:

MANDERA COUNTY

Mandera County is one of the 47 counties in Kenya that was established in March 2013 following the promulgation of the Constitution of Kenya, 2010. It measures about 25,939.8 km² and is located at the extreme end of North Eastern Kenya, bordering Somalia and Ethiopia. According to the Kenya census 2009, the county had an estimated population of 867,457 persons with 125,763 households and a density of 34 persons per km².

The main economic activity in Mandera County is pastoralism, contributing approximately to 72% of the total household income. Cross-border trade, artisanal



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

This plan will work well for Counties in the Arid and Semi-Arid (ASAL) regions where trees do not grow on their own but has to be nurtured to maturity through daily watering.

In the areas where rainfall is adequate, the vulnerable population can be engaged in tending to the green parks and flowers along the roads so that the cities remain clean and green.

What would you avoid?

While undertaking this program, it is paramount to check with the existing government records to avoid double dipping for some while others will be sleeping hungry. If the County and National government work together with the local leaders and community heads, this can be easily achieved since they know each other.

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

Oxfam office in Kenya. (December 2017). Beneath the Dryland: Kenya Drought Gender Analysis. Retrieved November 2022 from <https://kenya.oxfam.org/latest/policy-paper/beneath-dryland-kenya-drought-gender-analysis>

Enywe, Adugna and Mengistu, Sileshi. (2013). Double Marginalized Livelihoods: Invisible gender Inequality in Pastoral Societies. Societes. Retrieved November 2022 from <https://mdpi.com/2075-4698/3/1/104>

IGAD office (October 2012). Drought Resilience and Sustainable Livelihoods Program in Horn of Africa (DRSLP-HoA)

Kenya National Bureau of Statistics and Society for International Development. (2013). Exploring Kenya's Inequality: Pulling Apart or Pulling Together? Retrieved November 2022 from <https://www.knbs.or.ke/download/mandera-county/>



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The things that need to be done differently might be the provision of water through the town water system to cut on cost. The other thing is planting of indigenous trees and fruits in the future so that the people can also have an extra benefit of getting fruits/ seeds from the plants.

H.E. the Governor has already pledge to introduce agro-forestry through his manifesto.

Recommendations (Conclusion)- The purpose of the knowledge asset developed is to help others who may face similar challenges. Therefore, in this section it is important to consider what the lessons learned in the previous section may mean for others.

What are the most important conclusions and recommendations from the experience?

Afforestation/ reforestation is very import program that should be undertaken by all Counties so that we are able to reach and surpass the National target of the 10% trees cover by 2030.

The program contributes to the Country's vision 2030, SDGs, AU Agenda 2063 and others under the environment and social pillars since it falls under climate action, women and youth empowerment, social protection and providing equal opportunities to employment.

The UN has projected that most of the current world population will be leaving in urban centres by 2050 and more so in Sub-saharan Africa, it is time we plan ahead to make our urban areas more livable by creating greening spaces and inculcating the attitude of environmental conservation in our population.

The trees will help in cleaning our environment of the GHGs that we continually produce through unmaintained cars, industries, use of chemicals and cooking using firewood and charcoal.

What would you advise other sectors seeking to replicate the model?

The model of integrating environmental conservation with empowerment of the vulnerable members of the community is one of the best practice that has already borne fruits in Mandera. The same can be realized in any part of Kenya and beyond. We encourage Counties to adopt this model so that they sensitize the population on the importance of the environment by practically doing something about it and earning at the same time.



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- ❖ The County Government did the funding of the construction of water tanks, purchase of seedlings, purchase of protective mesh to prevent animals scavenging on the seedlings, payment of casuals, hire of water bowsers to deliver water to the tanks and actual planting, supervision and management. The County Government also donated two water bowsers to Mandera Secondary and Moi girls to help them with the water of trees within their institutions and other uses.
- ❖ National Bank of Kenya – planted and maintained 200 seedlings for one year after which they handed over to the County Government.
- ❖ Kenya Forest Services – did long rains and short rains planting in schools and provided seedlings through the National Hygiene Program (Kazi Mtaani).
- ❖ Equity Bank – planted trees in the Mandera Secondary and Moi Girls schools.
- ❖ Entrepreneurs – there are several business persons who have invested in nurseries which supply seedlings of different species where residents can buy from.

What were the resource implications?

The program is very expensive since the region does not get rains like in the other parts of the Country coupled with the high temperatures that lead to high-evapotranspiration, the trees need to be nurtured to maturity. For this to be realized, water has to be provided by water bowsers from the river or boreholes on daily bases and trees have to be looked after for about five to seven years before they can grow well to be able to survive on their own. The cost of management goes to about Kshs. 270M per year that caters for the salaries, hire of vehicles, construction and repair of tanks, inputs and supervision.

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

The program will be sustained by connecting the water tanks to the town piping so that the cost of hiring water bowsers can be done away with. The trees that will have matured and can grow on their own will also be left to grow on its own and transferring the manpower to new sections that are not currently covered due to budget constraints.



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70% of the population in the County have no formal education according to KNBS reports. Level of education is the key to formal employment in the Country. If a deliberate action is not taken to do an affirmative action to cater for the uneducated population, we will always be chained in a circle of poverty that will lead to other social problems and crime.

Implementation of the practice (*Solution Path*): this section should give a step by step description of the best practice and how it works, as a solution to the challenges)

What were the main activities carried out?

The main activities carried out included:

1. Planning – the team at the Department of Environment set up a plan on how to implement the program as directed by the County Executive Committee (CEC) under the leadership of the Governor.
2. Identification/mapping of the streets and institutions where the trees were to be planted.
3. Identification of the workers to be engaged as beneficiaries of the program in coordination with the chiefs and local elders to identify the most vulnerable mothers and youth.
4. Procurement of tools and other inputs that will be used to make the program a success.
5. Construction of tanks at strategic points to facilitate adequate watering of the trees.
6. Actual planting and allocation of duties among the identified workers.
7. Supervision and management of the program.

When and where were the activities carried out?

The activities were started the financial year 2014/2015 and it is being expanded periodically. The program was piloted along the main Mandera – Isiolo road (A13) and was later expanded to cover other feeder roads and government institutions.

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

The program was majorly run by the County Government but later other stakeholders came on board to compliment the good initiatives started by the County Government.



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- 1) Increased the aesthetic value of the town.
- 2) Helped in mitigating against the sand storms that used to be very frequent during the dry spells.
- 3) Assisted in providing shade from direct sunlight for the residents who walk to buy items from the market, go to job or schools.

The engagement of vulnerable mothers and youth has helped in:

- 1) Solving urban poverty to some extent since they now have a source of livelihood.
- 2) Has also in a way reduced domestic violence cause by fight over scarce resources, in households where men were doing menial works to provide for the families.
- 3) The income from the program for the vulnerable people has a psychological impact such as raising the self-esteem of the person. This motivates the individual to take their children for medical attention and to schools which allows them to integrate in the society hence involved in the decision making and participation in community activities
- 4) The program is directly impacting on 1,230 households through monthly payment of Kshs. 10,000 – 15,000 per employee. This source of income will definitely impact indirectly on twice or thrice of the stated households at the end of every month.

Lessons learnt: This section describes the key takeaways from the experience- what you would want the recipient of the knowledge asset to remember?

What worked really well – what facilitated this?

The involvement of the locals in the identification of the most vulnerable members of the society was one of the thing that has contributed to the success of the program since the communities were in agreement on the identified persons. If this would have been done differently, the ownership of the program will not have been achieved.

The initiative of the government to plant trees also changed the perception of the population who did not think they can play a role in environmental mitigation in their small ways.

The trees cover in the Municipality has greatly increased with households planting trees within their plots on the rise.

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



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Sensitizations are also on-going to encourage the residents to adopt trees by planting on the road reserve in front of their plots and manage the trees to maturity. The uptake of these idea is already good with a number of people planting and tending to trees in front of their homes.

H. E. the Governor has also directed the departments to include an environmental component in all government projects so as to deal with the devastating effect of the climate change.

The Integrated Strategic Urban Development Plan (ISUDP) for Mandera, Elwak and Kutulo that was developed also creates many green spaces within the urban centers so that we have smart cities as we urbanize.

Results of the practice (outputs and outcomes)- this section needs to create an outline showing whether the actions taken had a positive or negative impact. The description must be detailed as well as concise. If possible, quantify a result and measure it against a baseline. Information given here will provide credibility for the approach and will help readers make informed choices on use of the knowledge asset for replication.

What were the results of the actions taken through the process? – what are the outcomes? Was an assessment of the practice carried out? If yes, what were the results?

The Greening Program has produced the desired results in the sense that we have turned the Municipality green. The trees along the roads before the advent of devolution was just a few. Currently, the planted trees that is under the care of the Mandera Municipality stands at over 30,000 trees. This figure does not include trees planted in the schools and other National Government institutions and homesteads. We have presided over distribution of over 250,000 trees to the public during National and County events over the last 10 years. The planting of trees is an on-going process. H.E. the Governor, Mohamed Adan Khalif, has pledged to plant 1million trees over the current term of government in his manifesto. He also pledged to introduce agro-forestry as a measure to support food security and job creation while protecting the environment and promote the use of *Prosopis Juliflora* as an alternative source of charcoal production to reduce deforestation.

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

The planting of trees has contributed to positive results in the following ways:



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When the County government was inaugurated in 2013, the pioneer administration set out a plan to curb the effects of climate change and the idea of greening Mandera Municipality as a pilot was born.

The program had an initial objective of:

1. Mitigating against the effect of climate change by increase the number of trees in the Municipality;
2. Provide a barrier to stop encroachment into the road reserves;
3. Add to the aesthetic value of the Municipality; and
4. Provide alternative livelihood for vulnerable members of the society.

The program had a ripple effect on the population of the Municipality and the County in general who have now seen the impact of the trees and adopted planting in their homesteads while protecting the ones planted by the County Government. The level of access to medical cover has also increased with the provision of NHIF cover for the beneficiaries of the program and their dependents.

Which population was affected?

The effect of drought has been affecting the entire population of the County, both in the rural and urban set-ups since pastoralism is the main source of livelihood for the population of the County. With the positive effect realized in Mandera where over 30,000 trees have been planted, the program has been escalated to other areas of the County. Elwak which is the second largest urban centre and Municipality has started the planting of the initial 1,500 trees which are now one-year-old. Initiatives have also been started in the other sub-counties like Lafey, Mandera West and Banisa where the local communities committed to preserve their ecosystem by discouraging the cutting of live trees.

How did the problem impact on the population?

The persistent drought has led to death of animals in large numbers over the years. The loss of livestock for a pastoral community means loss of livelihood which forces the population leaving in the rural areas to migrate to the urban centers in search for an alternative livelihood. Having no capital to start businesses or knowledge and skills to survive in the urban set-up, the population of urban poor is on the rise. Most of the affected members of the residents happened to be widows and divorcees who were left with no one to take care of them and their children.



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191.7mm annually. The long rains fall in April and May averaging 69.1mm, while the short rains fall in October and November averaging 122mm.

Most parts of the county experience long hours (approximately 11 hours) of sunshine in a day. This causes high evaporation rates, leading to withering of most of the vegetation before they mature. The continuous sunshine in the county has great potential for harnessing solar energy.

MANDERA MUNICIPALITY

Mandera Municipality is a semi-autonomous corporate entity of the Mandera County Government established by H.E. the Governor pursuant to section 9(1) of the Urban Areas and Cities Act, 2011. The Charter establishing the Municipality was signed on 21st May 2018 and gazetted 17th September 2018 through notice number 10407. The jurisdiction of the Municipality covers three wards of the Mandera East Sub-county; Twonship, Neboi and Khalalio wards.

The entity has several mandates granted in the charter among them; construction and maintenance of recreational parks and green spaces.

The Greening program was started under the County Department of Environment and Natural Resources and handed over to the Municipality in 2019.

PROBLEM/ CHALLENGE

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

Mandera County faces perennial drought due to high temperatures coupled with low rainfall that has been failing over the years. The effect of the drought is worsening as a result of the climate change, bad farming practices and deforestation.

During the rainy seasons, we also experience flash floods since the vegetation has been wiped off by cutting of trees for use as fuel (firewood and charcoal) and overgrazing by animals.

Reports done by Kenya National Bureau of Statistics (KNBS) indicate that 93% of the County population use firewood for cooking while another 6% uses charcoal. 90% of the households that use firewood are reported to be headed by female. This statistic predicts a grim picture if actions are not taken to mitigate against the level of deforestation that is taking place couple with the unfavourable weather conditions.



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mining, beekeeping and irrigation-aided agriculture are the other viable ventures. Beekeeping is gaining popularity in most parts of the county, while irrigated subsistence agriculture is practiced along the Daa River. The common breeds of livestock reared in the county are goats, cattle, camels, sheep, donkeys and chickens.

Position and Size

Mandera County is located in the North Eastern part of Kenya. It borders Ethiopia to the North, Somalia to the East and Wajir County to the South-West. The county lies between latitudes 20 11` North, and 40 17` North, and longitudes 39° 47` East and 41° 4.8` East. It covers an area of 25,939.8km²

Physical and Topographic Features

Mandera County is characterised by low-lying rocky hills resting on the plains that rise gradually from 400m above sea level in the south at Elwak, to 970m above sea level on the border with Ethiopia. The rest of the topography is low-lying, characterised by dense vegetation with thorny shrubs of savannah type. This is especially found along the foots of isolated hills, covered by bushes, shrubs, boulders and the invasive *prosopis juliflora* (*mathenge*) shrubs. The flat plains make drainage very poor, causing flash floods during heavy rains. There are no lakes, swamps or dams, but earth pans are a common feature in the county.

Daa River, whose source is the Ethiopian highlands, flows eastwards along the county's boundary with Ethiopia, covering 150km along the border and passes through Malkamari, Rhamu Dimtu, Rhamu, Libehia, Khalalio and Township wards into Somalia at Border Point One (BP1). The Daa River basin spans an area of about 60,106km² and bestrides on the three countries of Kenya, Ethiopia and Somalia. About 9,119km² of the basin area lies in Mandera County. Geographically, the catchment extends between 41.884° – 38.465° East and 3.997° – 6.456° North from the border to the origin of the catchment in southeastern Ethiopian highlands.

Climatic Conditions

Temperatures are high with a minimum of 24°C in July and a maximum of 42°C in February. Variation in altitude is the cause of differences in temperatures across the county, where places near Banisa Constituency experience low temperatures due to neighboring highlands in Ethiopia. Rainfall is scanty and unpredictable, averaging