

KUTOKA URBAN SLUMS INITIATIVE

In Dust and Smolder: *Irrepressible Enterprising Community!*



SOCIAL MAPPING OF DANDORA DUMPSITE

FINAL REPORT

APRIL, 2021

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ACRONYMS

AUV	Unmanned Aerial Vehicle
CBD	Convention on Biodiversity
CIDA	Canadian International Development Agency
DANIDA	Danish International Development Agency
EA	Environmental Analysis
EU	European Union
FGD	Focus Group Discussion
GAHP	Global Alliance on Health and Pollution
GEF	Global Environment Facility
GHGs	Green House Gases
GoK	Government of Kenya
GWMO	Global Waste Management Outlook
HWWK	Hope Worldwide Kenya
IHME	Institute for Health Metrics and Evaluation
ISWA	International Solid Waste Association
ISWM	Integrated Sustainable Waste Management
KII	Key Informant Interview
MEAs	Multilateral Environmental Agreements
MOCS	Mainstream and Options Consulting Synergies
PBT	Phone Based Technology
POPs	Persistent Organic Pollutants

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PPPs	Public Private Partnerships
PSP	Private Sector Participation
SCPOPS	Stockholm Convention on Persistent Organic Pollutants
SDGs	Sustainable Development Goals
SHOFCO	Shining Hope for Communities
SMCW	Sound Management of Chemicals and Waste
SPSS	Statistical Package for Social Sciences
SWM	Solid Waste Management
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization



Acknowledgement

We take this opportunity to thank the almighty God for His loving kindness and protection that in the midst of Corona Virus Disease of 2019 (COVID-19) pandemic, none of the people directly involved in the work was taken ill.

This task was brought to fruition through efforts and resources from many people and organizations whose inputs we highly acknowledge.

We appreciate the Kutoka Urban Slums Initiative's Board under the Chairmanship of Fr. John Wembootsa. We also thank Ms. Raymond Shillah, the Executive Director and her entire management team. We highly appreciate the leadership exhibited and team spirit during this undertaking. Further appreciation goes to Mr. Joseph Muthama (the Kutoka Network's Officer in charge of Public Education & Training) for helping in identifying and mobilizing the contact persons at the dumpsite. We also unreservedly thank Mr. Maina Kafae Macharia and Mr. Samuel Goko for providing security which enabled the research team to access the dumpsite as well as mobilizing the Focus Group Discussion (FGD) participants from among the people who live or work at the dumpsite.

Much thanks also go to the 86 respondents who created time within their busy schedule to respond to our questions and attend the discussions. We are highly indebted to Mr.Abdi and his team for providing the Unmanned Aerial Vehicle (UAV) as well as photo and videography services. MOCS Community Development Bureau takes exemplary appreciation to the 10 research assistants who conducted FGD sessions, General Population Interviews (GPIs) and Key Informant Interviews (KIIs), Data Entry Clerk and more specifically Mr. Symon Kisomo who was the data analyst.

Benard Osaha



EXECUTIVE SUMMARY

Kutoka Urban Slums Initiative (Kutoka Network) is implementing a Project titled *“Enhancing the knowledge of Wakaazi in 5 self-organized settlements to engage with their leaders and make them more answerable”*.

One of the deliverables of the Project is relevant stakeholders and decision makers agree on a road map to close the Dandora dumpsite.

This has informed the need to undertake a Social Mapping of Dandora Dumpsite to identify Stakeholders, Workers and Inhabitants to inform the road map towards closure. The overall objective of the Social Mapping is *to conduct awareness sessions to the workers at the Dumpsite to improve their working conditions and to facilitate different stakeholders to agree on a common approach to close the Dandora Dumpsite*.

Social mapping helps in building a picture of the relevant existing structures and key actors in the primary focus area.

The specific objectives of social mapping were:

- a) Identifying various actors currently implementing programmes at the Dandora Dumping Site.
- b) Establishing ongoing programmes by State & non-state actors by ascertaining which actor is doing what in which sector, which resources & from where
- c) Documenting the challenges faced by different actors.
- d) Analyzing different legislations, policies & measures, which address the problem of the Dandora Dump site.
- e) Coming up with lessons learnt, conclusions and recommendations which may inform Kutoka Network’s interventions at the dumpsite.



The mapping adopted definition of social mapping from Flora & Fauna International (2016) *as a visual method of showing the relative location and distribution of different people together with their social structures, groups, clusters or organizations and what they do in that particular area.* In realization of the above, the mapping used a multi layered thoughtful tact to undertake the task and utilized appropriate methodologies (methods, techniques and approaches).

In the wake of COVID 19, the consultancy deployed technology by use of Unmanned Aerial Vehicle (AUV) and Phone Based Technology (PBT).

Drone was used to carry out aerial photography and videography. This eased the optical and audio capture which may not have been possible due to the terrains and gullies formed by mounds of dump.

The Consultant used Phone Based Questionnaires (PBQs) running on ONA platform <https://enketo.ona.io/x/wgJkpzXg> for Key Informant respondents that was administered on 24 lead persons in various sectors that included Public Sector, Faith Based Organizations, Not For Profit Entities, Political Representatives and other Opinion Shapers/Influencers. The choice of the Key Informants was purposive convenience as informed by both desk research and referenced by the respondents to the semi-structured questionnaires who had earlier interacted with the people who either live or work at the dumpsite.

Semi Structured questionnaires ran on a phone based application dubbed ONA platform which has the capability to gather and store data <https://enketo.ona.io/x/8KegsS1Q> administered on 48 interviewees among the general population that work at the dumpsite representing security providers, scavengers, garbage collectors and garbage transporters.

Two homogenous participatory and deliberative sessions (FGD) were held in the waste site bringing together (14 participants) comprising of 6 females and 8 males who provided much needed insights into the daily happenings at the waste site. The consultants ensured that the issues expressed or discussed



were recorded accurately through phones. Notes taking went a long way to ensure that issues of importance/significance did not escape attention.

Findings

The demographic patterns reflect that women have lived longer at the dumpsite at between 16 and 40 years (mean of 19.6) compared to men at between 10 and 32 years (mean of 19.5). This could also be construed to mean that women are more resilient than men. The proportion of young adults transiting from youth (35 years) bracket seems to be getting pushed out of mainstream socio-economic gainful engagement with 4 out of 6 women (66%) and 3 out of 8 men (37.5%) in the age bracket 36-40 finding their way into the dumpsite. This further confirms the vulnerability of women to social and economic stresses and shocks.

Among the population working at the dumpsite, the longest serving worker (27 years) is a female, while the longest serving male worker has been there for 20 years.

Among the male respondents, lack of money was the main reason for working at the dumpsite (8); rent distress was the second reason (5) and post-election violence was third (3). For the female respondents, unemployment and "the only source of living" (6) were the main reasons for settling in the dumpsite. Poverty and referral by a friend (4) came second while marital breakdown and large family to care for came third (3).

Among those that work at the dumpsite, self-initiative (29) was a major factor, post-election violence (12) was second, and invitation by a friend (9) and domestic violence (6) followed respectively.

All the 8 male FGD members stated that affordability of life, lack of money and scavenging were the motivators to live in the dumpsite, while on the other hand, the 6 female respondents had 2 reasons namely the only source of living



and low cost of living. Among the workers at the dumpsite, motivation ranges from simplicity of life, daily earning of KES 500, work without supervision, freedom and familiarity with the area to considering the place as home. SHOFCO and Napenda Kuishi Rehabilitation Programme Trust (NKT) seem to be known to all the respondents, closely followed by Ayiera Initiative, Dandora Health Centre and Boma Rescue Centre.

Among the people working at the dumpsite, the main activities are scavenging, garbage collection, scrap metals and plastic collection, recycling, providing security, farming and garbage dumping. These were corroborated by the male and female focus group discussants.

There seemed to be a big disconnect between the people working at dumpsite and those living in dumpsite on one hand and the Key Informants on the other. The KII respondents mentioned rehabilitation of street children; public participation, human rights advocacy, poverty alleviation, supporting kids living at the dump site and giving them hope and providing legal advice, coupled with providing access to Justice. The latter were neither mentioned nor appreciated by the people either working or living in dumpsite who are the primary beneficiaries.

Nairobi County manages the weighbridge at the dumpsite and collects fees. The Nairobi Metropolitan Services (NMS) and Kenya Electricity Generating Company (Kengen) are in collaboration to undertake a project dubbed 'Waste to Energy' which is at feasibility stage. They are waiting for a report by the expert contracted to do the study by end of April 2021.

From the conversation with NEMA, the officers seem to abdicate the role stipulated in section 9 of the EMCA Law 1999 on the objects and functions of NEMA by insinuating that they have no direct role on the Site rather than supervisory.

Main funders of Programmes in this locality are United Nations Environment Programme (UNEP), Global Environment Facility (GEF), World Bank, Danish



International Development Agency (DANIDA), Canadian International Development Agency (CIDA), European Union (EU) and Government of Kenya (GoK). These partners support individual projects and as such they have not pulled resources into one basket. This means that coordination of the Programmes at the dumpsite is disjointed.

The Programmes are spread in education, health, justice, environment, governance, security, human rights and public administration sectors.

Phones and laptops are the main technological gadgets used by the development practitioners to deliver on the Programmes.

All the respondents agreed that actors had challenges. Among the Male Focus Group Discussants, 87.5% and 100% of the Female (FGD) agreed that the actors faced various challenges and 91.7% of Key Informants agreed that actors had challenges.

Among the Male (FGD), lack of protective gear, diseases, insecurity, recognition by the government and pollution were the main challenges. On the other hand, female (FGD) cited lack of protective gear, exposure to heavy metals, accidents, lack of food and clothing, lack of access to health care and insecurity as the main challenges they faced.

Challenges as listed by the Key Informants were lack of funds, influx of street children in the dumpsite, disunity among actors, dishonesty, unwillingness to get out of dumpsite, poor coordination by different actors, lack of support from the government, cartels, corruption, conflict of interest, presence of criminals in dump site.

The Population working in the dumpsite listed vehicles bringing waste sometimes disappear and dismantled, bad company of drug traffickers, poor health among the workers due to bad work environment, accidents, unreliability of income, lack of immediate medical help, bad weather, and insecurity as the main challenges.



On whether the challenges were policy or institutional, all the KII respondents observed that they were institutional. This is construed to mean that there are enough policy frameworks to address the issues of Dandora dumpsite.

The Female (FGD) suggested that sponsors should chip in, government should build social amenities in the dumpsite, there is need for enhancement of security, there should be funding opportunities to enable the women start businesses.

Among the Male (FGD), there was need to improve security by putting up a police post, building of a public health Centre and putting up clean water points. The Key Informants suggested that parents and the society should take responsibility of the children, the dumpsite or manage it in a better way, and that the dumpsite should be privatized, and government should employ the people who work in the dumpsite. They also suggested that there should be transparency in any decision concerning the dumpsite, there should be public education on why there is need to separate the waste at source.

The population working in the dump site suggested that the Nairobi City County Government should ensure all vehicles dump their waste in the designated dumpsite, and the children working in dumpsite to go back to school or college. The need to assist the workers with capital to start their own business was overemphasized.

Recommendations

a) Identifying various actors currently implementing Programmes at the Dandora Dumping Site.

- i. It is recommended that Nairobi Metropolitan Service(NMS) , Ministry of Health (MOH), National Environment Management Authority (NEMA) and Ministry of Interior and Coordination of Government may think of developing a database of various actors at the Dandora dumpsite with a view to coordinate activities and track progress made.



- ii. It is recommended that a needs assessment of people living or working at the dumpsite be conducted to inform evidence based programming.
- iii. It is recommended that the various actors may form collaboration or network for self-regulation or knowledge, technology and other capacity transfers or sharing.

b) Establishing ongoing Programmes by State & non-state actors by ascertaining which actor is doing what in which sector, which resources & from where.

- i. It is recommended that since the ongoing Programmes are spread across various sectors, a sector wide approach (SWAP) in Programming is ideal for the actors under the Principles of Programme Based Approaches (PBAs) within the Paris Declaration on Aid Effectiveness.
- ii. It is recommended that since some actors work within the same sectors and subsectors, it is prudent for redefinition of interventions (upstream) or mitigation (downstream) to minimize duplications of efforts and instead build synergies.
- iii. It is recommended that resource mapping be conducted to allow for ring fencing of resources and enhancement of accountability.
- iv. It is recommended that development partners working with actors at the dumpsite may think of setting up a basket fund bringing on board thematic expertise and response to make the interventions or mitigations more encompassing.

c) Documenting the challenges faced by different actors.

- i. It is recommended that since the actors are aware of their challenges, they should hold platforms or sessions to discuss solutions to the challenges.
- ii. Further considering that the challenges are more institutional than structural, the actors may develop inward looking strategies to address the challenges.

d) Analyzing different legislations, policies & measures, which address the problem of the Dandora Dump site.

- i. This study has analyzed various legislations, policies and measures which address the problem of Dandora dumpsite as such recommends that Kutoka Network is at the best of its moment to achieve the desired outcome within 6 months as ruled by ELC Petition No. 43 of 2019.
- ii. Kutoka Network should galvanize the pro-actors on their side to influence the reactors.
- iii. This will minimize rigidity as opposed to pulling the reactors on their side which will harden the pro-actors.
- iv. Kutoka Network may consider developing a plan of action based on the empirical data provided by the study.

e) Coming up with lessons learnt, conclusions and recommendations which may inform Kutoka Network's interventions at the dumpsite.

- i. To address the issue of lack of money and poverty among the people who live in the dumpsite, it is recommended that actors may explore running **Integrated Livelihood Programmes** with an inbuilt component of vocational and financial training.
- ii. For those who were pushed to the dumpsite by Post Election Violence, it is recommended that Human Rights Organizations should pick up the matter and ensure that social justice is achieved.
- iii. For women who undergo Gender Based Violence, the actors may run a full-fledged Programme targeting men and boys that will inculcate positive masculinity. Since marital breakdown is another push factor, it is recommended that actors may as well run marriage therapy initiatives.
- iv. On the motivation to make the populations stay/work in the dumpsite, it is recommended that Nairobi City County Government should explore



avenues of integrating this resilient labour force into its environment department and absorb it creatively.

- v. It is recommended that the Non State Actors and Faith Based Organizations working with the populations in dumpsite may form consortium or alliance and consolidate the resources. This will create levels of accountability and create high impact with minimal inputs.
- vi. It is recommended that the key Programme holders should involve their beneficiaries in project management cycle to enhance accountability.
- vii. Since there are already partners funding some projects, it is recommended that the recipients may build collaborations, alliances or partnerships pool and utilize these resources in a common basket.



CHAPTER ONE: INTRODUCTION

1.1 The Context

In 2015, the Global Waste Management Outlook (GWMO, 2015) report estimated that at least 2 billion people do not have access to regular waste collection and they are served by dumpsites.

According to Global Waste Management Outlook (GMWO, 2018) 125 million tons of municipal solid waste (MSW) was generated in Africa in 2012, which is expected to double by 2025. The growth in waste generation in Africa is expected to be so significant, that any decrease in waste generation in other regions globally will be overshadowed by Africa. Collection services in most African countries are inadequate. The average MSW collection rate is only 55%. More than 90% of waste generated in Africa is disposed of at uncontrolled dumpsites and landfills, often with associated open burning.

19 of the world's 50 biggest dumpsites are located in Africa, all in Sub-Saharan Africa. On average, 13% of MSW generated in Africa is plastic and 57% is organic waste, the bulk of which is currently dumped but which could provide significant socio-economic opportunities for countries. Recycling has emerged across Africa, driven more by poverty, unemployment and socioeconomic need than by public and private sector design. An estimated 70–80% of the MSW generated in Africa is recyclable, yet only 4% of MSW is currently recycled. Informal waste pickers are active in recovering valuable resources from the waste at little to no cost to municipalities and private companies.

The World Health Status Report (WHO,2015) highlighted that exposure to open dumpsites has a greater detrimental impact on a population's life expectancy than malaria and that in addition to human/ environmental impact, the financial cost of open dumpsites runs into the tens of billions of USD.

In the lexicon of definition by the International Solid Waste Association (ISWA,2016), the term "open dump" (or dumpsite/waste site) is used to characterize a land disposal site where unselected deposit of solid waste takes place with either no, or at best very limited measures to control the operation and to protect the surrounding environment. The International Solid Waste



Association (ISWA, 2016) states that typical open dumpsite consists of waste from many sources, waste types and compositions.

ISWA further observes that the waste deposited is also not covered or compacted and in most cases in these open dumpsites, waste remains susceptible to open burning. Exposed wastes are open to all weathers and needless to say are often not engineered at all, with no leachate management and no Landfill Gas (LFG) collection. In addition, they are poorly managed without any controls on accepting incoming materials or record keeping.

Open dumpsites often permit scavengers or waste pickers to collect recyclables without any protection measures and in most cases allowing even living within dump sites or sometimes even scavenging for food leftovers.

This is true of Dandora Municipal Dump Site, which is estimated to be 45 years since commissioning.

A study by United Nations Environmental Programme titled **Environmental Pollution and Impact to Public Health: Implications of the Dandora Municipal Dumping Site in Nairobi (UNEP, 2007)** concluded that dumpsites pose significant health threats both to the people involved in the operations and to the general public living in the neighborhood.

The report states that high levels of toxic heavy metals were noted in the Dandora soil samples. Health wise, 50% of the children were found to be having blood lead levels above 10 micrograms per deciliter of blood indicating exposure to high levels of environmental lead. The hematological system of most of the children was suppressed with 12.5% having hemoglobin levels below the normal ranges.

The results indicated high potential risks both to the environment and human health that could be attributed to the Dandora municipal waste dumping site.

Another Report by Concern Worldwide (2011) **Trash and Tragedy: The Impact of Garbage on Human Rights in Nairobi** posits that contamination from the dumpsite has adversely affected human health, particularly through respiratory diseases, endocrine complications and cancer.



The Report states that at least half the children in surrounding neighborhoods have heavy metal concentrations in their blood that exceed the maximum level set by the World Health Organization.

The curious observation made by the report is that despite these risks, between 6,000 and 10,000 people eke a living from the dumpsite, while over 200,000 people have indirect economic and social links to it. Consequently, many around the dumpsite do not want it removed for fear of losing its benefits that accrue from the activities associated with the dumpsite.

1.2 Background

According to Global Waste Management Outlook (GWMO, 2015) report, dumpsites receive roughly 40% of the world's waste and they serve about 3.5 billion people globally.

The UNEP World Dumpsites Atlas (UNEP, 2016) estimated that the 50 biggest dumpsites in the world affect the daily lives of 64 million people. As urbanization and population growth will continue, it is expected that at least several hundreds of millions more people will be served by dumpsites, mainly in the developing world.

The report concludes that if the situation follows the business as usual scenario then dumpsites will account for 8-10 % of the global anthropogenic Green House Gas (GHG) emissions by 2025.

From various studies, the operations of dumpsites damage the health wellbeing and violate the human rights of hundreds of millions of people that live in their surroundings or even inside them.

Ensuring proper sanitation and solid waste management sits alongside the provision of potable water, shelter, food, energy, transport and communications as essential to society and to the economy as a whole.

Dandora dumpsite

Nairobi City Council Environmental Committee Report (NCC,2000) states that Dandora dumpsite is a sprawling waste site, spreading across over 30 acres, in the heart of the Nairobi slums of Korogocho, Baba Ndogo, Mathare and Dandora.

The site was opened in 1975 with World Bank funding and was deemed full by 2001 after daily dumping for 26 years. Currently, the dumpsite receives 75% of the 3000 tons generated in Nairobi daily.

The management of the Dandora dumpsite fell within the ambit of the Nairobi City County pursuant to Schedule IV of the Constitution (CoK, 2010) until the National Government and the County Government of Nairobi signed a Deed of Transfer of Functions pursuant to Article 187 of the Constitution of Kenya, 2010 read with Section 26 of the Inter-governmental Relations Act, (No. 2 of 2012), which was published in the Kenya Gazette on 25th February, 2020 as Gazette Notice No.1609 of 2020.

Under the deed, the County Government of Nairobi transferred four functions relating to county health services, county transport services, county planning and development services and county public works, utilities and ancillary services to the National Government. Consequently, the Nairobi Metropolitan Services (NMS) is therefore in charge of the environment, water and sanitation services Chapter 5 of the Constitution obligates both the Government and citizens to protect the environment.

1.3 Social Mapping

Kutoka Urban Slums Initiative is implementing a Project titled "*Enhancing the knowledge of Wakaazi in 5 self-organized settlements to engage with their leaders and make them more answerable*".

One of the deliverables of the Project is relevant stakeholders and decision makers agree on a road map to close the Dandora dumpsite.

This has informed the need to undertake a social Mapping of Dandora Dumpsite to identify Stakeholders, Workers and Inhabitants to inform road map towards



closure. The overall objective of the Social Mapping is *to conduct awareness sessions to the workers at the Dumpsite to improve their working conditions and to facilitate different stakeholders to agree on a common approach to close the Dandora Dumpsite.*

Social mapping helps in building a picture of the relevant existing structures and key actors in the primary focus area. The objectives of the exercise were:

- a) Identifying various actors currently implementing Programmes at the Dandora Dumping Site.
- b) Establishing ongoing Programmes by State & non-state actors by ascertaining which actor is doing what in which sector, which resources & from where
- c) Documenting the challenges faced by different actors.
- d) Analyzing different legislations, policies & measures, which address the problem of the Dandora Dump site.
- e) Coming up with conclusions and recommendations.

1.4 Legislations, Policies & Measures which have attempted to address the Problem of the Dandora Dump Site.

Waste management is problematic world over and it is the greatest hurdle for municipal governments within the urban areas to manage due to rapid population which increases generation of waste (Ogutu, FA 2019).

As a remedy, Daskalopolous, E (2010) states that only well-established management practices operated within a policy framework on Solid Waste Management (SWM) will reduce the environmental damage through conservation of the limited and scarce resources.

According Shah, P S. (2016) there are over 500 Multilateral Environmental Agreements (MEAs) worldwide, of which 320 are regionally based.

The global and regional MEAs to which Kenya is a signatory are categorized in five clusters based on the United Nations Environment Program (UNEP) framework on International Governance, namely (a) atmosphere, (b) chemicals and hazardous waste, (c) land, (d) seas; and (e) biodiversity (UNEP, 2001; 2007).



In Kenya, the evolution of policy implementation on SWM has taken a progressive development of the policy landscape (Ogotu, FA 2019).

Dandora Dumpsite has been a subject of environmental, health, legal and constitutional discussions and rulings for quite a long time. It is observed that the presence of the dumpsite within a residential area contravenes various charters, conventions, Acts of parliament, the Constitution and policies and that courts in Kenya have loudly pronounced themselves on the same but this has not yielded the desired outcome of relocation.

According to Population and Health Research Center (APHRC, 2016), there are different types and levels of policies addressing solid waste management in Kenya. These are sector-specific, general, and stand-alone as well as embedded solid waste management policies.

At National level, the various Solid Waste Management (SWM) policy documents addressed different but thematically inter-related aspects of SWM. While the Penal Code (Cap 63) makes it an offence to vitiate the environment, the Public Health Act (Cap 242) focuses on prevention of nuisance that could affect health. The Constitution of Kenya (CoK, 2010) grants rights to protected environment along with the associated obligations to protect it. On the other hand, the Local Government Act (CAP 265) and its successor the County Government Act (Act No. 17 of 2012) have vested powers to local authorities and County Governments to establish the necessary systems and procedures that are necessary to deal with SWM at local level. In this regard, the four key policy documents are well synchronized as they address the inter-related aspects of SWM at national levels. This shows that integration at national level is ensured in two ways: complementarity (one policy framework complementing the other); and Reinforcement (one policy framework reinforcing the execution of the other).

The Environmental Management and Coordination Act (EMCA, 1999), which was introduced in the presence of many of the sector-specific environmental provisions, was a more generic framework designed to facilitate a coordinated response to environmental management. Though it had the potential to



integrate the fragmented sector-specific provisions, it was not aimed to supersede them. But rather it was meant to reinforce them in to a better management model of the environment. Therefore, a clear overlap between EMCA (1999) and sector-specific policies, with no indication of policy hierarchy, was existing in the 2000s.

In line with the Constitution of Kenya, the National Environment Policy (2013) outlines responsibilities of the government – what the government will do in relation to creating a favorable ground for protecting the environment. On the other hand, the National Solid Waste Management Strategy (NEMA, 2014), which addresses only one core area of the National environment policy, aimed to establish a platform for action between stakeholders to systematically improve SWM.

1.4.1 Legal and Policy Issues of Dandora Dumpsite

Solid waste collection and disposal within Nairobi city has attracted much attention from its populace and among environmental justice movements within and beyond the country. The attention is partly due to the importance of Nairobi as a host city to global headquarters of the United Nations Environment Programme (UNEP) and the United Nations Human Settlements Programme (UN-Habitat), besides many other international organizations that have offices in Nairobi. In other words, Nairobi is the environment headquarters of the world and the pressure and drive by various stakeholders to have a cleaner Nairobi is understandable.

While all members of society often appreciate and enjoy environmental improvements of civilization, a growing body of evidence reveals that environmental problems of human civilization are not borne equally by various segments of society (Nduati P.M., 2014).

Quite more often than not, people with low income tend to bear greater environmental and health risks of civilization than affluent people. In most cities, low-income settlements play host to most waste dumping sites while affluent communities enjoy some of the best waste management, health, water and sanitation facilities even though affluent people (by virtue of their



consumption habits) generate more waste.

A study by Nduati (2014) found that the socially and economically deprived persons in Dandora suffer more from the consequences of mismanaged waste and are also more vulnerable to health risks thus a relationship was drawn between socioeconomic status and environmental equity issues.

Among the issues that stunt move towards proper solid waste management, and which have received little research attention is the role of conflict and criminal activities in the sector. Under the Urban Africa Risk and Knowledge Program, Africa Population and Health Research Centre (APHRC,2016) found that pulling out of municipal authorities from the provision of SWM services, coupled with the '*informalization*' of the Kenyan economy in the 1990s and the increase in unemployment and poverty set the stage for the involvement of criminal elements in the sector.

The report concludes that private providers became the dominant mode of service provision and with this came competition for client base. In addition, organized criminal groups wield control over Nairobi's only dumpsite with violence and conflict as their instruments to retain control over materials' recovery and onward sale to recyclers.

A. Penal Code (Cap 63)

The first policy framework related to Solid Waste Management (SWM) was the Penal Code of 1948 (section 192) that forbade anyone to pollute the atmosphere and water sources. The statute aimed at providing community with healthy environment. The law aimed at according the citizens an environment that would support their healthy subsistence and sustenance. This piece of legislation has unendingly been contravened by players in the Solid Waste Management sector who continue to allow dumping at the Dandora Dumpsite despite its proximity to the residential area. All pleas from the residents to have



the site responsibly managed have fell on deaf ears thus pushing the citizens to fate.

B. The Local Government Act Cap 265 (1963)

The Local Government Act Cap 265 (1963) under section 160a gave local authorities power over sanitation of SWM services. This statute enhanced the enforcement of by -laws under the local governments. However, Nairobi City Council did not at any time observe sanity of the environment as provided for in this piece of legislation. For the time the Act was in place, no meaningful efforts were employed to preserve human dignity. As observed by APHRC (2016), Kenya is awash with good policy pronouncements but without commensurate capability and willpower to implement. This is one of such good legal documents that was selectively implemented and did not attempt to address the issue of Dandora dumpsite.

C. The Public Health Act CAP 242 (1986)

Under section 115 of the Public Health Act, CAP 242 (1986), it is provided that no person shall cause a nuisance or cause to exist on any land or premises any condition liable to harm or endanger human health. This is not true of Dandora Dumpsite which has severally been declared a public nuisance by the courts, studies and communities living around the site. Without willpower to enforce the Public Health Act, dumping has continued without regard to the environmental justice, equity or sustainability principles.

D. The Environment Management and Coordination Act (EMCA, 1999)

In 1999, the Environment Management and Coordination Act (EMCA, 1999) was constituted to provide a framework for the environmental laws in Kenya including waste generation and management. Its objective is the total management of environmental issues in Kenya thus gives citizens a right to



waste free and secure environment and places responsibility on them to safeguard it. The Act stipulates procedures and standards to regulate the management of solid waste and categorizes waste into hazardous and non-hazardous to accelerate its' efficient management. In this regard, NEMA is mandated to provide regulatory and supervisory role to safeguard the integrity of the environment, however, as far as Dandora Dumpsite is concerned, NEMA has turned a blind eye on the enforcement of law.

E. The Constitution of Kenya (2010) and Conventions, Frameworks and Charters that address SWM

By dint of Article 2(5) & (6), of the 2010 Constitution, Kenya has ratified a number of laws governing the environment particularly its' preservation.

These include the Convention on Biodiversity (CBD, 1992), United Nations Convention to Combat Desertification (UNCCD, 1994), the United Nations Framework Convention in Climate Change (UNFCCC, 1992), and the Stockholm Convention on Persistent Organic Pollutants (POPS, 2004) among others.

The Convention set the ultimate objective of stabilizing greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous human- induced interference with the climate system. The Stockholm Convention aims to protect human health and the environment from the effects of persistent organic pollutants (POPs) which are toxic, have the potential to accumulate in unhealthy quantities in humans and animals, are stable and thus resistant to natural breakdown and can be transported over long distances through the atmosphere and oceans. Upon the promulgation of the 2010 Constitution, the protection of the environment was considered a matter of human right and placed under the Bill of Rights.

Article 42 of the Constitution guarantees every person the right to a clean and healthy environment, which includes the right to have the environment protected for the benefit of present and future generations through legislative and other measures, particularly those contemplated in Article 69, and to have obligations relating to the environment fulfilled under Article 70.

Under Article 2 of the Fourth Schedule, the Constitution has devolved the Solid



Waste Management to the 47 counties and establishes a legal basis for implementing the county integrated solid waste management plan. These Articles provide adequate legal framework upon which Nairobi City County Government and Nairobi Metropolitan Service may develop and implement enforceable laws, regulations and policies to safeguard residents of Nairobi against blatant environmental pollution emanating from Dandora dump site.

F. The Urban Areas and Cities Act (2011)

Beside the county-specific SWM policy frameworks, the Urban Areas and Cities Act (2011) require cities to have the ability to effectively manage and dispose waste. This should lead Nairobi City County Government and Nairobi Metropolitan Service to take deliberate steps to manage Dandora dump site.

G. The County Government Act (2012)

The County Government Act (2012) provides that the Counties are responsible for the entire system of waste from collection, transportation, treatment, dump site management and solid waste disposal. This Act places responsibilities of Dandora dumpsite management on Nairobi City County Government. However, the Nairobi City County Government has not taken any deliberate measures to provide either interventions or mitigations towards improvement of social life for populations living or working within and around the Dandora dumpsite.

H. Nairobi City Council by - laws of 2007

Additionally, there exists by-laws at the local level and the Nairobi County for instance developed the Nairobi City Council by - laws of 2007 on Solid Waste Management and the Nairobi City County Integrated Solid Waste Management plan (2010- 2020) which envisages a world class city by adopting a sustainable SWM system of healthy, safe and secure environment for all. As much as the document is robust, its implementation does not match the aspirations.

I. Kenya Environmental Sanitation and Hygiene Policy (2016-2030)



The policy commits the Government of the Republic of Kenya at both National and County levels to pursuing a robust strategy that will not only enable all Kenyans to enjoy their right to highest attainable standards of sanitation but also to a clean and healthy environment as guaranteed by Articles 42, 69 and 70 of the Constitution of Kenya 2010. The policy therefore focuses on a range of complementary strategies devoted to ensuring universal access to improved sanitation and clean and healthy environment. Ultimately, it is the goal of this policy to ensure better health, dignity, social well-being and quality of life for all the people of Kenya. To achieve this grand vision, the policy puts emphasis on increasing public and private sector investment through public-private partnerships. In this, the policy aims to mobilize all available resources – public and private, community and individual – in pursuit of our collective national vision of transforming Kenya into “a newly-industrialized, middle-income country providing a high quality of life to all its citizens in a clean and secure environment.”

The above pieces of legislation, policies and frameworks attest that there is more than enough legal grounding for the relocation of and or better still, modernization of Dandora Dumpsite which has flagrantly contravened all rules by legislation and aspirations of the People of Kenya as stipulated in the Constitution.

J. Waste Management and Social Development Goals

Waste management is well embedded within the Sustainable Development Goals (SDGs) being included either explicitly or implicitly in more than half of the 17 goals. Sound management of chemicals and waste (SMCW) is a specific target under SDG 12 on Sustainable Consumption and Production. It is also referred to under SDG 3 on Good Health and Well-being and SDG 6 on Clean Water and Sanitation.

Goal 3: Ensure healthy lives and promote well-being for all at all ages

Dumpsites are a global health emergency. The World Health Organization (WHO), Institute for Health Metrics and Evaluation (IHME) and Global Alliance



on Health and Pollution (GAHP) calculated that in 2012 exposures to polluted soil, water and air resulted in an estimated 8.9 million deaths worldwide —8.4 million of those deaths occurred in low-and middle-income countries.

By comparison, HIV/ AIDS cause 1.5 million deaths per year and malaria and tuberculosis fewer than 1 million each. More than 1 in 7 deaths are the result of pollution. In addition one-third of the world's urban population live in slums, where people lack basic infrastructure and services and are exposed to environmental and social health risks such as indoor and outdoor air pollution, lack of water and sanitation, and poor working conditions. One-quarter of the global burden of disease can be attributed to environmental risks, including climate change and exposure to toxic chemicals.

Goal 6: Ensure access to water and sanitation for all

Groundwater around the world is threatened by pollution from dumpsites. Besides the organic load of leachates, hazardous pollutants include the trace metals such as cadmium, lead and mercury, pesticides such as dichlorodiphenyltrichloroethane (DDT), Chlordecone and their by-products, industrial chemicals and open-air combustion by-products. Several studies have confirmed presence of these trace metals at the Dandora dumpsite. This poses threat to lives of marine, flora and fauna.

Goal 12: Sustainable Consumption and Production

UN Water in its 2015 Progress Report on SDG 6 (UN Water, 2016) observes that dumpsites are the global symbols of unsustainable consumption and production. Urban waste generation is projected to increase dramatically from 1.3 billion tons per year in 2015 to 2.2 billion tons per year by 2025, with high increases in middle-income developing countries. Such a scenario will result in increasing water and air pollution, land and forest degradation, waste generation and the use of harmful chemical substances. Economic growth will have to be decoupled from resource use and environmental degradation, so that inclusive socioeconomic development can be sustained. This observation is supported by the trends and discourses in the case of Dandora dumpsite which continue to between 1,800 and 2,000 tons of solid waste into the environment

1.4.2 Gazette Notices

a) GAZETTE NOTICE NO. 14654

**THE NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY
NOTICE TO THE PUBLIC TO SUBMIT COMMENTS ON AN ENVIRONMENTAL IMPACT
ASSESSMENT STUDY REPORT
FOR THE PROPOSED CONSTRUCTION OF SANITARY LANDFILL IN RUAI**

Pursuant to regulation 21 of Environmental (Impact Assessment and Audit) regulations, the National Environmental Management Authority (NEMA) has received an Environmental Impact Assessment Study Report for the implementation for the proposed construction of sanitary landfill. The project involves the construction of a sanitary landfill in Ruai.

The proposed site is located in the East of Nairobi City, adjacent to Dandora Sewerage Ponds on one side by Nairobi River and the Embakasi Ranching Scheme on the other. The project area is located in Ruai Location.

The following are the anticipated impacts and proposed mitigation measures as set out in the Kenya Gazette.

The full report of the proposed project is available for inspection during working hours at:

- (a) Director General, NEMA, Popo Road, off Mombasa Road, P.O. Box 67839-00200, Nairobi.
- (b) Permanent Secretary, Ministry of Environment and Mineral Resources, NHIF Building, Community, P.O. Box 30521, Nairobi.
- (c) Provincial Director of Environment, Nairobi Province.
- (d) District Environment Officer, Embakasi and Makadara.

The National Environment Management Authority invites members of the public to submit oral or written comments within thirty (30) days from the date of publication of this notice to the Director General, NEMA, to assist the Authority in the decision making process of the plan. (EIA/5/2/786)

Z. O. OUMA,
For: Director General,
National Environment Management Authority
MR/8398545.

b) GAZETTE NOTICE NO. 14655

**THE NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY NOTICE TO THE PUBLIC TO
SUBMIT COMMENTS ON AN ENVIRONMENTAL IMPACT ASSESSMENT STUDY REPORT
FOR THE PROPOSED DECOMMISSIONING OF DANDORA DUMPSITE, NJIRU DISTRICT,
DANDORA DIVISION,
DANDORA LOCATION AND DANDORA SUB-LOCATION**

Pursuant to regulation 21 of Environmental (Impact Assessment and Audit) regulations, the National Environmental Management Authority (NEMA) has received an Environmental Impact Assessment Study Report for the implementation of the proposed decommissioning of Dandora dumpsite.

The project will involve decommissioning of the Dandora dumpsite due to the major negative environmental impacts of the local environment as a result of uncontrolled and open dumping.

The dumpsite is located in the East of Nairobi City, surrounded by Dandora estate, Lucky Summer, Ngomongo, Korogocho villages and the Nairobi River. The project is located within the following administrative boundaries: Njiru District, Dandora Division, Dandora location and Dandora sub-location.



The following are the anticipated impacts and proposed mitigation measures as set out in the Kenya Gazette.

The full report of the proposed project is available for inspection during working hours at:

- (a) Director General, NEMA, Popo Road, off Mombasa Road, P.O. Box 67839-00200, Nairobi.
- (b) Permanent Secretary, Ministry of Environment and Mineral Resources, NHIF Building, Community, P.O. Box 30521, Nairobi.
- (c) Provincial Director of Environment, Nairobi Province.
- (d) District Environment Officer, Kasarani and Njiru.

The National Environment Management Authority invites members of the public to submit oral or written comments within thirty (30) days from the date of publication of this notice to the Director General, NEMA, to assist the Authority in the decision making process of the plan.

SALOME MACHUA,

For: Director General,

MR/8398545 National Environment Management Authority

(EIA/5/2/787)

The two notices were issued by NEMA after a ruling by High Court in 2011 and subsequent declaration that the Dumpsite was full and as such it was decommissioned. Since 2001 when the site was decommissioned, dumping has continued unabatedly.

1.4.3 Ligations and Rulings on Dandora Dumpsite.

City Council of Nairobi was to decommission the dumpsite in early 2012, after 8 years of planning. However, protracted court battle between the council and the Kenya Airports Authority (KAA) over the relocation of the dumpsite to Ruai (as advised by the Vision 2030 Blue Print) brought the process to a grinding halt. This was made worse by the restrictions imposed by the aviation industry that have left Nairobi with no viable alternative to the Dandora dumpsite. The city hosts three airports (JKIA, Wilson and Moi Air Base) and each has a 13 km radius within which a sanitary landfill cannot be established. Previous plans by City Hall to relocate the dumpsite were blocked by the Kenya Civil Aviation Authority (KCAA) over flight safety risks for aircraft using the Jomo Kenyatta International Airport.

The suit papers stated that "If indeed the respondents cared at all for the petitioners' human dignity they would commission ways to manage the waste that emanates from each sub county of Nairobi and not to dump everything in Dandora," said Ms Mwenesi in suit papers. Dandora dumpsite currently



continues to receive more than 2,700 tons of garbage from across the city every day.

This ruling condemned the presence of Dandora Dumpsite that is in place without commensurate interventions to mitigate its impact on the community it serves.

1.4.4 ENVIRONMENT AND LAND COURT PETITION NO. 43 OF 2019

In this matter, the court pronounced itself that Section 3 of EMCA is guided by principles of intergenerational and intra-generational equity when exercising its jurisdiction in claims where a person alleges that the right to a clean and healthy environment has been denied or violated. The court concluded that a polluted river or environment of death spewing poison is not what the principle of intergenerational equity expects the present generation to bequeath to future generations.

The Court acknowledged that from the reports and studies adduced by the Petitioners, there was credible evidence that the burning of waste in Dandora dumpsite and the water pollution from effluent and metals found in the Athi and Nairobi River may be harmful even though the nature of that harm is not fully understood.

The Respondents were ordered to take precautionary actions aimed at reducing exposure to potentially harmful substances, activities and conditions to minimize significant adverse effects to health and the environment through implementing the precautionary principle by shifting the burden of proof to the polluters and exploring alternatives to the harmful actions such as the Dandora dumpsite.

The Court directed the Respondents to adopt the precautionary principle in the management of the environment in which the Petitioners reside by taking the measures to stop air and water pollution.

Specifically, that within 30 days of the date of judgement, the Respondents shall identify materials and processes that are dangerous to the environment and human health in relation to the people living in Nairobi and more



specifically in Korogocho, Mukuru, and the areas surrounding the Dandora dumpsite to prescribe measures for the management of the materials and processes identified as obligated by Section 86 of EMCA. The court also directed the Respondents to prescribe measures and formulate methods for the management and safe disposal of waste from the City County of Nairobi in accordance with Section 86 of EMCA read with Part 2 (2) (g) of the Fourth Schedule to the Constitution. The Nairobi Metropolitan Services was directed to ensure that all the waste from the City County of Nairobi is disposed of in an environmentally sound manner in accordance with the Environmental Management and Coordination (Waste Management) Regulations of 2006. **The Nairobi Metropolitan Services was directed to take steps to decommission the Dandora dumpsite and relocate it to another site within six months of the date of the judgement. The Nairobi Metropolitan Services was directed to shut down the Dandora dumpsite within six months of the date of the judgement and rehabilitate the dumpsite.**

In the intervening period, the Nairobi Metropolitan Services was ordered to take all practical steps to ensure that the waste in the Dandora dumpsite is managed in a manner which protects human health and the environment against adverse effects from the waste. The Nairobi Metropolitan Services must also ensure that there is no burning of plastic or other waste in the Dandora dumpsite. In establishing the new landfill for the safe disposal of the waste from Nairobi County, the Court ruled that the Nairobi Metropolitan Services will in conjunction with NEMA, make concerted efforts aimed at waste reduction, separation of biodegradable and organic waste, and prioritize the implementation of recycling strategies. The Nairobi Metropolitan Services and NEMA were ordered to ensure that they comply with the requirement for public participation in the implementation of the judgement. The court directed NEMA to undertake Programmes intended to create public awareness, enhance environmental education on the pollution of the Nairobi and Athi River and to



develop and disseminate guidelines relating to the prevention of pollution and degradation of the Nairobi and Athi Rivers in accordance with Section 9 of EMCA. This to be done with the relevant lead agencies and the necessary public participation.

1.5 Social Dimensions of Solid Waste

While one can analyze solid waste system from multiple perspectives such as environmental, technical and financial, it is ultimately intended for, operated by, and managed by people.

Solid waste system is thus in a very real sense a social system, linking different human actors in various types of relationships and spheres through differential sets of constraints and incentives.

The very need for solid waste system is a product of human behavior, which produces waste, and human behavior shapes every aspect and step of the process, from consumption to domestic waste handling to final disposal. Finally, the manner in which the system is managed has both direct and indirect impacts on individuals, communities, institutions, and practices. These impacts can be seen in terms of contaminants and toxins that have a harmful outcomes on health such as respiratory diseases and cancer, among other problems and diseases, eye sore and inhabitable environments causing social embarrassment as well as insecurity that enhance fear among prospective investors.

In this regard, for Kutoka Network to lead the process of decommissioning the Dandora dumpsite as ordered by ELC petition no. 43 of 2019, it is imperative that social perspectives are understood to manage the fears and expectations of people living or working at the dumpsite, the politicians who accrue benefits from the dumpsite, several Non State Actors who fundraise using Dandora dumpsite and private investors who position trucks and caterpillars at the dumpsite.

1.5.1 Social Perspectives in waste related behaviors

Theorists Herman and Reynolds (1994) fronted the symbolic interactionism, a sociological theory that develops from practical considerations and alludes to



people's particular utilization of parlance to make images and normal implications, for deduction and correspondence with others.

This approach is often used to understand what's defined as deviant within a society. There is no absolute definition of nonconformity, and different societies have constructed different meanings for unconventionality, as well as associating different behaviors with deviance. In this perspective, constructivism is looked at from the social concerns that '*civilized*' people throw garbage away while another segment of the society defined as scavenger (*chokora*) runs after garbage and more so dwells in the waste site. This is a reason enough to make Kutoka Network consider the dwellers at the dumpsite the primary stakeholders who will come out to defend their home against any intents or attempt to relocate.

To effectively lead the process of decommissioning Dandora dumpsite, Kutoka Network may undertake another Social Analysis to specifically identify risks and optimize opportunities.

Key questions to ask at each stage and phase include: What are the social constraints upstream? How will the proposed solution affect or be affected by them? What actions can support desired outcomes? How can identified risks and opportunities best be managed?

In a Roadmap: *Towards Sustainable Dumpsite Management* (UNEP,2011), the view adopted is the one that is presented in GWMO, namely the Integrated Sustainable Waste Management (ISWM), which is a simplified form of the model, first developed for UN-Habitat's Solid Waste Management in the World's Cities.

ISWM involves three broader dimensions for analyzing a waste management system, namely the *physical elements, the stakeholders and the strategic aspects*.

a) Physical Elements

The term "physical elements" refers to the infrastructure of the system from waste generation through storage, collection, transport, transfer, recycling,



recovery, treatment and disposal. At this point, individual human rationality and reasonability widely informs the process with much influence from socio-ecological constructs. In case of Dandora dumpsite, the physical element is a landmine of players and politics which make it murkier and toxic. Politicians have a stake in the dumpsite since a majority own the trucks that transport the garbage from the estates to the site. They as well secure the site by bankrolling the goons who provide security to the machinery and equipment as well as keep them informed of any plans underway. It is ideologically right to involve the politicians as stakeholders, but it is practically feasible to bring them on board as saboteurs. This will enable Kutoka Network to manage the political processes meticulously.

An empirical observation of Sewerage transfer from Kayole to Ruai is a classic example where politicians allocated the land to their cronies after several bloody running battles. This culminated with granting Kayole Police Station land to not only provide security, but also legitimize the illegality.

b) Players or Stakeholders

The term "stakeholders" refer to all the involved parties including; Nairobi Metropolitan Service, Nairobi City County Government, National Environment Authority, National Government, those who live in the dumpsite, waste generators / service users, producers, service providers, civil society and international agencies; etc.

These players congregate at different points philosophically clustered as pro-actors and reactors.

The Pro-actors will see an opportunity to gain socio-economic benefits by downplaying risks involved, while the reactors will put controls to regulate and generate money through enforcement. In this regard, people living in the dumpsite, garbage collectors/dumpers and other service providers are seen as pro-actors while Government and is considered a reactor. Kutoka Network may need to pay more attention to the pro-actors if the wheels of decommissioning the dumpsite are to revolve faster. This will require strategic aspects.



c) Strategic Aspects

Michael Porter (1979) coined the term “strategic aspects” which concerns all the political, health, institutional, social, economic, financial, environmental and technical facets.

This systemic description may look at both the “hardware” and the “software” of waste management and proves to be very useful for decision makers. The description says that each and every “hardware” arrangement is functional only with specific “software” tools and vice versa. So, you can’t just simply upgrade or change your “hardware” keeping the same “software”. In this regard, Solid Waste Management in Nairobi has over the years focused on hardware (economic, equipment and environmental) but ignored the social aspect which is equally important

Since this is a social mapping exercise, the consultant delves into the social benefit of the dumpsite.

One of the main social benefits of the dumpsite is formation of a new home for the scavengers which gives birth to households. The waste site family is a strongly knit social fabric that draws its strength from perceived vulnerability. These vulnerabilities are social, economic, political and systemic. From this family sprouts a team of dwellers who provide each other with psychosocial support. In this regard, any attempt to close or relocate the dumpsite will naturally attract resistance from the families who see it as an affront on their very existence and willful desire to decimate them. This will be a reason enough to moot a serious resistance if not a revolt.

To address this challenge, concerned parties require a social charter to lead structured negotiations that may result in the desired outcomes. The charter should address systemic, economic and political fears and provide assurances to the people working or living in the dumpsite.



CHAPTER TWO: METHODOLOGY

Social Mapping of Dandora Dumpsite was done in total appreciation of the intent and spirit of the assignment. The mapping adopted definition of social mapping from Flora & Fauna International (2016) *as a visual method of showing the relative location and distribution of different people together with their social structures, groups, clusters or organizations and what they do in that particular area.* In realization of the above, the mapping used a multi layered thoughtful tact to undertake the task and utilized appropriate methodologies (methods, techniques and approaches).

2.1 Methods

The assignment was undertaken using Biophysical and Social Methods.

The biophysical method provided the consultants with an opportunity to capture the spatial representation of the dump site ecosystem using drone - Aerial Unmanned Vehicle (AUV). This was to delimit the challenges due to the contours and gulley formed by the mountains of garbage. The drone assisted in capturing aerial pictorials and videos.

In social method, the study used constructivism: an extension of symbolic interaction theory which is an approach often used to understand what's defined as *aberrant* within a society. It is an agreed philosophy that there is no absolute definition of deviance, and different societies have constructed different



meanings for unorthodoxy, as well as associating different behaviors with deviance.

The study used engagements as the main strategy to gather qualitative and quantitative data through collaboration between data collectors and presumed hostile primary stakeholders (scenario planning/building and deliberative assessment). The Consultants applied participatory and deliberative engagements in form of two (2) homogenous Focus Group Discussions (FGD) and Participatory Rapid Appraisal (PRA) for co-learning and knowledge co-production.

2.2 Techniques and Approaches

Social Mapping included quantitative and qualitative research techniques through Surveys, Key Informant Interviews and models; participatory and deliberative tools (Focus Groups, Participatory Rapid Appraisal (PRA), as well as ways of measuring in quantifiable terms (i.e. preference assessment)

The consultant interfaced FGD/PRA to combine quantitative and qualitative information that explored social perspectives and in particular ecological issues. The interface appreciated that, the qualitative information obtained during the interviews allowed for deeper investigation of the reasons underpinning the underlying personal views as was captured in voice.

García-Nieto(2014 appreciates that PGIS is being increasingly used in recent years due to its potential for including stakeholder's perceptions in ecosystem services spatial assessments, incorporating different types of knowledge, mapping ecosystem services in data scarce regions, enhancing capacity building and social learning, and integrating stakeholders in a democratic process-oriented approach to decision-making.

During the research assistants training, participatory scenario planning was used to help explore current trends, drivers of change and key uncertainties, and how these factors might interact to influence the future decisions



(Schoemaker 1995). This was important since one of the deliverables of the assignment was that *the Dandora dumpsite is decommissioned*.

On 22nd April, 2021 the validation workshop was convened at Holy Cross Catholic Church Dandora to receive feedback from the respondents and to enrich this report.

2.3 Equipment and Tools

In the wake of COVID 19, the consultancy deployed technology by use of Unmanned Aerial Vehicle (AUV) and Phone Based Technology (PBT).

2.3.1 Drone

Drone was used to carry out aerial photographs and videos. This eased the visual and audio capture which may not have been possible due to the terrains and gullies formed by mounds of dump.

2.3.2 Key Informants and Semi Structured Questionnaire

The Consultant used Phone Based Questionnaires(FBQs) running on ONA platform <https://enketo.ona.io/x/WgJkpzXg> for Key Informant questionnaire that was administered on 24 lead persons in various sectors such as Public Sector, Faith Based Organizations, Not For Profit Entities, Political Representatives and other Opinion Shapers/Influencers. The choice of the Key Informants was purposive convenience as informed by both desk research and referenced by the respondents to the semi-structured questionnaire.

Semi Structured questionnaire ran on ONA platform <https://enketo.ona.io/x/8KeqwS1Q> administered on 48 semi structured interviews among the general population that work at the dumpsite



representing security providers, scavengers, garbage collectors and garbage transporters at the waste site.

2.3.3 Focus Group Discussions

Two homogenous participatory and deliberative sessions (FGD) were held in the waste site bringing together (14 participants), 6 females and 8 males who provided much needed insights into the daily happenings at the waste site. The discussions were robust and demystified various myths around the waste site. In focus group interviews, broad discussion topics were developed to irradiate more light on the themes under study and provided a broad frame for discussions which followed. The specific points that emerged as part of the discussion were included in expressed opinions. The consultants ensured that the issues expressed or discussed were recorded accurately through phones. Notes taking went a long way to ensure that something of importance/significance did not escape attention/capture.

[AUD -20210406-WA0012... and AUD-20210407-WA0001.....](#)

2.4 Participatory Scenario Planning (PSP)

Since one of the deliverables of the assignment is *the Dandora dumpsite is decommissioned*, the consultant used the validation workshop to critique the scenario and provide the client with a thought through scenario.

Scenario planning was primarily used as a decision support tool to advise on the risk levels and to tone down ambitions that project planning ride on. It was used to assess the possible future impacts of various drivers of change (including external drivers) or strengthen internal capacity of KUTOKA Network to improve on its interventions or mitigations.

2.5 Concerns and Responses

During the inception meeting held on 31st March, 2021 Kutoka Network team, some concerns were raised which were addressed by the inception report.

Table 1

Concerns and suggestions	Response
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<p>1. Are you able to incorporate Ruaraka MP, Lucky Summer MCA, and other key people in Ngomongo, Lucky Summer and immediate neighborhoods and other religious leaders</p>	<p>Yes it is possible we shall look into the numbers and incorporate them</p>
<p>2. During the report writing are you be able to assess what draws the people/motivation to the dumpsite</p>	<p>With the use of test/analysis, this will be highlighted</p>
<p>3. On report outline, are you able to have a 3-5 pages summary of the report for quick read?</p>	<p>Yes it is possible</p>
<p>4. During analysis, key voices of gender, youth (male/female) should come out strongly audible.</p>	<p>This will be taken into account during the development of data collection tools</p>
<p>5. Specific information targeting various stakeholders on what they are doing should come out strongly</p>	<p>It is one of the objectives of the assignments and therefore there is a deliberate step to capture this data</p>
<p>6. The outline of the report</p>	<p>A sample report outline shared will be used with slight modifications to accommodate the client needs and expectations.</p>
<p>7. How will you conduct the FGDs</p>	<p>The mobilization of the FGD will be done through Gatekeepers paradise approach. The paradise is a guarded community that only insiders are able to bring forth the members. AUV will seek to demystify the Members.</p>
<p>8. How will you identify the participants</p>	<p>The EOI has spelt out an elaborate strategy to identify the various participants.</p>



CHAPTER THREE: FINDINGS AND DISCUSSIONS

This chapter is arranged according to the Terms of Reference as stipulated in the assignment contract.

3.1 Demographic Patterns of Respondents

Table 3.1 Sex of respondents

Table 2

Category	Frequency		Total	Percentage	
	Male	Female		Male	Female
Focus Group Discussants representing households living in the dumpsite.	8	6	14	57%	43%
General Population working at the Waste site	21	27	48	43.8%	56.2%
Key Informants	13	11	24	54%	46%
	42	44	86	48.8%	51.2%



The mapping exercise reached 86 respondents (42 males and 44 females) disaggregated as 14 (8 males and 6 females) FGDSs representing households living in the dumpsite, 48 (21 males and 27 females) general population working at the dumpsite and 24 (13 males and 11 females) Key Informants representing organizations and institutions that either run Programmes in the dumpsite or influence policy direction as regulators.

Table 3.2 Age bracket of the respondents

Table 3

Age Bracket	Category of Respondents			
	FGD Female (frequency)	FGD Male (frequency)	KII (frequency)	Population at the waste site (Frequency)
15-20	0	0	0	4
21-25	0	0	0	14
26-30	0	0	2	8
31-35	1	2	2	6
36-40	4	3	2	5
41-45	0	1	5	2
46-50	1	1	9	7
51-55	0	1	4	2
Total	6	8	24	48

Table 3.3 a) Length of time lived at the dumpsite

Table 4

General Population	Focus Group Discussants
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n=48	Male n=8	Female n=6
15,15,24,7,20,18,7,11,13,8,11,13,8,11,8, 10,8,15,10,20,1,1,19,21,9 months, 5,2,30,8,8,7,2,2,10,5 months,12,20, 8,3 weeks, 3 months, 20, 3, 6, 16, 14, 12, 17 and 14 years respectively	32,25,21,20,19,15,14 and 10 years respectively	40, 10, 15, 16, 21 and 16 years respectively.
Mean Length of work is 11.6 years	Mean length of stay is 19.5 years	Mean length of stay 19.6 years

The demographic patterns reflect that women have lived longer at the dumpsite for between 16 and 40 years (mean of 19.6) compared to men at between 10 and 32 years (mean of 19.5). This could be construed to mean that either social and economic pressures easily pushed women out stable abodes or they are more resilient than men. The proportion of young adults transiting from youth (35 years) bracket seems to be getting pushed out of mainstream socio-economic gainful engagement with 4 out of 6 women (66%) and 3 out of 8 men (37.5%) in the age bracket 36-40 finding their way into the dumpsite. This further confirms the vulnerability of women to social and economic stresses and shocks. Among the population working at the dumpsite, the longest serving worker (27 years) is a female, while the longest serving male worker has been there for 20 years. This shows that as the history of the dumpsite is penned, human faces are a part of the story.

Table 3.3 b) How the respondents found themselves at the dumpsite

Table 5

(Male FGD)	Frequency
Lack of money	8
Poor education	3
Resettlement from Grogon in town along River road in 1978.	1
Business	2
Post-election violence from Ngomongo village.	3
Watchman / security	3
To settle since was unable rent a house.	5

3.3 c) How the respondents found themselves at the dumpsite

Table 6

(Female FGD)	Frequency
Birth	1
Poverty	4
Unemployment	6
Marital Breakdown	3



Referred by a friend	4
Large families to provide for	3
It's the only source of living	6

Among the male respondents, lack of money was the main reason (8); rent distress was the second reason (5) and post-election violence was third (3). For the female respondents unemployment and “the only source of living” (6) were the main reasons for settling in the dumpsite. Poverty and referral by a friend (4) came second while marital breakdown and large family to care for came third (3). This is construed to mean that the push factors affect women and men in almost the same way but they react differently. We find more women being invited by friends into the dumpsite due to the poverty they find themselves into. Among the women, marital breakdown was another factor that pushed them to live in the dumpsite.

Among those that work at the dumpsite, self-initiative (29) was a major factor, post-election violence (12) was second, and invitation by a friend (9) and domestic violence (6) followed respectively. This calls for the actors to refocus their interventions taking the push factors into consideration. On interrogation further, the respondents intimated that the dumpsite provides resalable goods that occasionally make life easy. It is the main attracting and retention factor for those who work at the dumpsite.

3.4 Motivation to stay/work in dumpsite

Table 7

Male (FGD)	Frequency	Female (FGD)	Frequency
It is the only way out for livelihood.	8	It's the only source of living	6
Good environment for business (Pig rearing).	3	Low cost of living	6
Life is low (affordable) for low income earners.	8		
Due to lack of finances	8		
Farming	4		
Scavenging	8		

All the 8 male FGD members stated that affordability of life, lack of money and scavenging were the motivators to live in the dumpsite. Another 4 observed that farming was a motivating reason. On the other hand, the 6 female



respondents had 2 reasons namely the only source of living and low cost of living. Among the workers at the dumpsite, motivation ranges from simplicity of life, daily earning of KES 500, work without supervision, freedom and familiarity with the area to considering the place as home.

The population working at the dumpsite listed simplicity of life in terms of food and shelter, daily earnings and working without supervision as the main motivating factors to work at the dumpsite. This is a reason for Kutoka Network to have keen interest in the social perspectives.

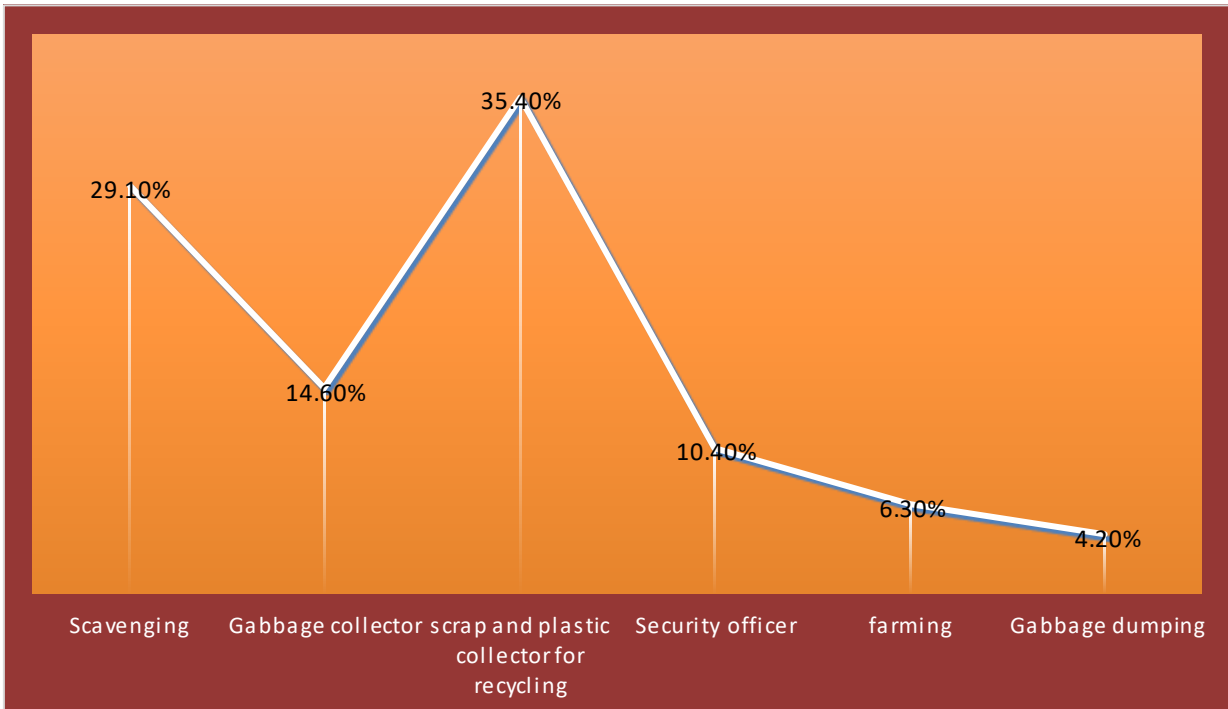
3.5 Current activities/Programmes implemented at the dumpsite.

There are several activities and Programmes going on at the Dandora dumpsite.

Among the people working at the dumpsite, the main activities are scavenging, garbage collection, scrap metals and plastic collection, recycling, providing security, farming and garbage dumping. These were corroborated by the male and female focus group discussants who undertake the same activities as well. The KII respondents mentioned rehabilitation of street children, public participation, human rights advocacy, legal aid and poverty alleviation as some of the Programmes they run to reduce the effects of suffering among the people living or working at the dumpsite. Looking at the Programme goals, there seem to be disconnect between what the people living/working at the dumpsite desire to see against what the KII respondents are implementing.

Table 3.4 Activities at the dumpsite (Population working at the dumpsite)

Figure 1



3.6 Organizations running Programmes that address issues at/of the dumpsite

Organizations that address issues that concern dumpsite can be categorized along various sectors such as education, health, water, environment, governance and social welfare.

- a. Education:** Napenda Kuishi Trust, Ayiera initiative, Hope Worldwide and SHOFKO run education schemes or fully fledged schools that support children from the dumpsite or the immediate neighboring community. Child sponsorship Programmes, scholarship and other forms of education support are undertaken courtesy of development partners. These education schemes include provision of teaching and learning materials, meeting costs of teachers and operational costs, purchase of school uniforms and feeding Programmes which are aimed at enhancing retention and transition among the children.

Health: Comboni Health Programme, Dandora Health Centre, Boma Rescue and Hope Worldwide implement Programmes that enhance access to primary health care among the populations in the dumpsite and the immediate neighborhood. The care entails preventive, promotive and curative services at highly subsidized rates. Comboni Health Programme has an integrated HIV/AIDS component that offer counseling, testing and treatment therapies.

c. **Water:** the populations living/working at the dumpsite do not have regular adequate supply of safe water. In this regard, **SHOFCO** was found to be involved in water, sanitation and hygiene initiatives which include putting up hand washing stations and occasionally supplying clean water to address the COVID 19 challenge.

d. **Environment:** United Nations Environmental Programme, World Bank, DANIDA, Kutoka Network, St, Johns Sport Society, Concern Worldwide, APHRC and University of Nairobi have participated in several studies cited in this report. These studies have been looking at the environmental and health impact attributed to Dandora dumpsite. In their recommendations, the issue of relocation of the dumpsite has been overemphasized. As players in this sector, their role has remained policy influencing through advocacy work, gaps analysis and knowledge dissemination.

e. The NMS and KENGEN are in collaboration to undertake a project dubbed 'Waste to Energy' which is at feasibility stage. They are waiting for a report by the expert contracted to do the study by end of April 2021. NMS manages the weighbridge at the dumpsite.

f. **Social Welfare** Holy Trinity and Holy Cross Catholic Churches provide spiritual nourishment to the families at the dumpsite since some of the families are church members, Comboni Health Programme, SHOFCO and Napenda Kuishi Trust implement counseling and psychosocial support. In the advent of COVID 19, most of these undertakings have slightly reduced.

Governance: Human Rights Organizations notably Kariobangi Paralegal Network and Dandora Justice Centre advocate for dignity on environmental rights, promotion of environmental rights, respect for environmental rights and monitoring air from the dump site. Judiciary has as well engaged with the community in areas of Alternative Dispute Resolution (ADR) under Article 159 of the Constitution of Kenya 2010.

3.7 Resources

Phones, desktops and laptops are the main technological gadgets used by the development practitioners.

On the issue of resources, Human Rights Organizations get volunteers from Kenyatta University while other Programmes get human capital from the community around Dandora. The organizations fundraise using different approaches.

Main funders of Programmes in this locality are UNEP, GEF, World Bank, DANIDA, CIDA, European Union and Government of Kenya. These partners support individual projects and as such they have not pulled resources into one basket.

3.8 Challenges faced by different actors

All the respondents (FGD, General Population and KII) concurred that players in the dump site had challenges. Among the Male Focus Group Discussants, 87.5% while 100% of the Female (FGD) agreed that the actors faced various challenges and 91.7% of Key Informants agreed that actors had challenges.

Among the Male (FGD), lack of protective gear, diseases, insecurity, recognition by the government and pollution were the main challenges. On the other hand, female (FGD) cited lack of protective gear, exposure to heavy metals, accidents, lack of food and clothing, lack of access to health care and insecurity as the main challenges they faced.



Challenges by the Key Informants were lack of funds, influx of street children in the dumpsite, disunity among actors, dishonesty, unwillingness to get out of dumpsite, poor coordination by different actors, lack of support from the government, cartels, corruption, conflict of interest and presence of criminals in dump site.

'Rebuilding the human being is cumbersome, for example the street boys have to be trained on how to ensure their personal hygiene'.

Key informant –Dandora

The Population working in the dumpsite mentioned that vehicles bringing waste sometimes disappear and end up dismembered and thereafter sold as scrap metal, bad company of drug traffickers, poor health among the workers due to bad work environment, accidents, unreliability of income, lack of immediate medical help, bad weather, and insecurity.

'Some people don't want the dump site to be relocated because they benefit from it. Yet the dump site has finished 20 years as required and was to be relocated to Ruai'

Social Justice Advocate Kariobangi.

On whether the challenges were policy or institutional, all the KII respondents observed that the challenges were majorly institutional and within the inner operating environment. As captured in the literature review, there are enough policy frameworks to address the issues of Dandora dumpsite ranging from charters, conventions, the constitution and Acts of parliament.

3.9 Suggested Solutions to the Identified Challenges

The Female (FGD) respondents suggested that sponsors should support where the current partners cannot, government was implored to build social amenities in the dumpsite, as well as need for enhancement of security. They further discussed need for funding women initiated businesses at the dumpsite.



Among the Male (FGD), there was need to improve security by putting up a police post, building of a public health Centre and putting up clean water points. The Key Informants suggested that parents and the society should take responsibility of the children, the dumpsite or manage it in a better way, the dumpsite should be privatized, and government should employ the people who work in the dumpsite. They also suggested that there should be transparency in any decision concerning the dumpsite, there should public education on why separate the waste at source.

The population working in the dumpsite suggested that the county should ensure all vehicles dump their dust in the designated dumpsite, well-wishers to support and the children working in dumpsite to go back to school or college. The need to assist the workers with capital to start their own business was overemphasized.

CHAPTER FOUR: RECOMMENDATIONS

4.1 Identifying various actors currently implementing Programmes at the Dandora Dumping Site.

- i. It is recommended that Nairobi Metropolitan Service (NMS), Ministry of Health (MOH), National Environment Management Authority (NEMA) and Ministry of Interior and Coordination of Government may think of developing a database of various actors at the Dandora dumpsite with a view to coordinate activities and track progress made.
- ii. It is recommended that a needs assessment of people living or working at the dumpsite be conducted to inform evidence based programming.
- iii. It is recommended that the various actors may form collaboration or network for self-regulation or knowledge, technology and other capacity transfers or sharing.

4.2 Establishing ongoing Programmes by State & non-state actors by ascertaining which actor is doing what in which sector, which resources & from where.

- i. It is recommended that since the ongoing Programmes are spread across various sectors, a sector wide approach (SWAP) in Programming is ideal for the actors under the Principles of Programme Based Approaches (PBAs) within the Paris Declaration on Aid Effectiveness.
- ii. It is recommended that since some actors work within the same sectors and subsectors, it is prudent for redefinition of interventions (upstream) or mitigation (downstream) to minimize duplications of efforts and instead build synergies.
- iii. It is recommended that resource mapping be conducted to allow for ring fencing of resources and enhancement of accountability.
- v. It is recommended that development partners working with actors at the dumpsite may think of setting up a basket fund bringing on board thematic expertise and response to make the interventions or mitigations more encompassing.

4.3 Documenting the challenges faced by different actors.

- i. It is recommended that since the actors are aware of their challenges, they should hold platforms or sessions to discuss solutions to the challenges.
- ii. Further considering that the challenges are more institutional than structural, the actors may develop inward looking strategies to address the challenges.

4.4 Analyzing different legislations, policies & measures, which address the problem of the Dandora Dump site.

- i. This study has analyzed various legislations, policies and measures which address the problem of Dandora dumpsite as such recommends that Kutoka Network is at the best of its moment to achieve the desired outcome within 6 months as ruled by ELC Petition No. 43 of 2019.
- ii. Kutoka Network should galvanize the pro-actors on their side to influence the reactors.
- iii. This will minimize rigidity as opposed to pulling the reactors on their side which will harden the pro-actors.
- iv. Kutoka Network may consider developing a plan of action based on the empirical data provided by the study.

4 **Coming up with lessons learnt, conclusions and recommendations which may inform Kutoka Network's interventions at the dumpsite.**

- i. To address the issue of lack of money and poverty among the people who live in the dumpsite, it is recommended that actors may explore running **Integrated Livelihood Programmes** with an inbuilt component of vocational and financial training.
- ii. For those who were pushed to the dumpsite by Post Election Violence, it is recommended that Human Rights Organizations should pick up the matter and ensure that social justice is achieved.



- iii. For women who undergo Gender Based Violence, the actors may run a full-fledged Programme targeting men and boys that will inculcate positive masculinity. Since marital breakdown is another push factor, it is recommended that actors may as well run marriage therapy initiatives.
- iv. On the motivation to make the populations stay/work in the dumpsite, it is recommended that Nairobi City County Government should explore avenues of integrating this resilient labour force into its environment department and absorb it creatively.
- v. It is recommended that the Non State Actors and Faith Based Organizations working with the populations in dumpsite may form consortium or alliance and consolidate the resources. This will create levels of accountability and create high impact with minimal inputs.
- vi. It is recommended that the key Programme holders should involve their beneficiaries in project management cycle to enhance accountability.
- vii. Since there are already partners funding some projects, it is recommended that the recipients may build collaborations, alliances or partnerships pool and utilize these resources in a common basket.



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