

End open burning:

An awareness-raising framework and guide for local government authorities



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Local Governments
for Sustainability

AFRICA

This guide is a tool designed for local government authorities to mitigate open waste burning and achieve sustainable waste management. It has been developed based on insights and practices shared by local government officials across sub-Saharan Africa.

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1 An overview of open waste burning in Africa

The open burning of waste continues to be a major waste management challenge for many African local governments. This challenge is primarily attributed to the lack of adequate waste management solutions, further exacerbated by a lack of knowledge about the environmental, social and economic disadvantages of burning waste.

An analysis by Adedara, Taiwo, and Bork (2023) estimated that sub-Saharan Africa has a waste collection rate of 65%, while the Africa Waste Management Outlook report estimated an average waste collection rate of 45% across Africa (UNEP, 2018). Waste collection rates vary significantly across African countries, with some reporting rates as low as 18%, while others achieve rates as high as 80%. These variations highlight how different resources and capacities affect governments' ability to fulfil waste management mandates and invest in innovative, sustainable solutions for diverting waste from landfills and dumpsites. As a result, open waste burning is a common action that urban residents take to dispose of their waste.

In low-income countries across the continent, it is estimated that 90% of waste is burned or dumped (Cogut, 2016; Kaza et al, 2018; UNEP, 2018 in Mebratu and Mbandi, 2022) and 20% of open burning takes place at the household level. Studies have attributed this largely to the lack of adequate waste management service provision

by local authorities, but a range of reasons for burning waste are evident across the continent.



The primary reasons for burning waste vary across different communities and regions, including the lack of proper waste management services, accessing valuable materials for resale, and a lack of knowledge about the negative effects of burning waste amongst a range of other reasons listed further in the document. What remains evident is that the impact on the environment is the same. Open burning of waste produces a range of carcinogens and short-lived climate pollutants (SLCP), including black carbon CO₂eq. Open burning also takes place in the most vulnerable communities such as low-income neighbourhoods and informal settlements or compounds, and near landfill

sites or open dumps. In neighbourhoods and circumstances where open burning is prevalent, people often lack adequate access to healthcare services to manage the negative health impacts of burning waste. They are thus vulnerable to the negative effects of open burning, and in some instances do not see or feel the ramifications of exposure to black smoke until it is difficult to treat co-diseases. The urgency to address this challenge is evident in the increasing cases of poor health, the increasing reports on poor air quality, and the increasing incidence of open waste burning. All in society have a key role to play in finding and implementing solutions to these challenges, but evidence demonstrates that the greatest opportunity to address this challenge lies in addressing poor waste management, as the root cause of open waste burning.

Local governments across the continent are mandated to manage waste. Often the task of addressing waste-related challenges and developing initiatives to eliminate open burning of waste is handled by waste management, public health, and communications departments. Various factors affect different local governments from fulfilling their mandates, including limited human resources, financial constraints, or coordination barriers.

This framework has been designed for local governments that are committed to eliminating open waste burning but have systemic gaps and challenges which need to be addressed to achieve these goals. It provides guidance for local government authorities seeking to create awareness in communities about open waste burning and waste valorisation. It has been developed to include interactive elements that can support taking action in contexts where limited resources are available for innovative action in waste management and awareness raising.



Because of our limited capacity in the unit we do have limited education and awareness activities, but it's really a drop in the ocean compared to what is needed. We have recognized that more needs to be done in terms of education and awareness in our air quality management plan, but the plan needs to be resourced. It's no good having all these great objectives if you don't have the resources to implement.

- Interview with Ian Gildenhuys, 2024

Making a case for awareness raising: Perspectives on open waste burning from local government officials

This awareness-raising framework draws on key insights from open waste burning practitioners in local governments and the development sector seeking to address the challenge of open waste burning in different capacities. It draws on their experiences and recommendations to provide a comprehensive overview of the approaches that local governments can take to effectively raise awareness to address open waste burning and, furthermore, improve waste management issues in local governments.

The majority of literature addressing open waste burning provides recommendations from the perspective of non-governmental actors with the shared goal of improving human and environmental health. While this is a highly valuable contribution to eliminating open waste burning, there is limited insight into engagements with local government practitioners to understand the barriers, challenges, and experiences faced at the local level in addressing this challenge. Through a series of interviews with local government practitioners, the following insights were shared regarding the elimination of open waste burning, and improving the quality of solid waste management in African cities.

The urgency of addressing the open burning challenge is not unknown to local government practitioners. In many instances, it is very well understood as a matter of urgency which is causing environmental harm and negatively impacting human health, as well as the economy. Unfortunately, a range of challenges and limitations often hinder their ability to act fast, timeously and effectively.

All local governments have varying degrees of access to financing, but common across all the cities engaged is the limited, or lack of, access to financing to address this challenge through long-term interventions. An interview with Evans Gichana

(2024) emphasised that “financing waste is an expensive venture”. Furthermore, his county does not have a budget allocation for sensitising the public about open waste burning. Waste management is certainly a problem in cities, but more urgent matters such as healthcare (whose effects are directly experienced by citizens) often take priority. Beyond waste collection and delivery to landfill sites, new and emerging approaches to addressing waste management challenges are often not budgeted for. As approaches such as zero waste and circular economy have emerged, we have started seeing the slow transformation of waste management systems to allow for more sustainable practices to thrive. Some local governments have progressed much further than others in putting new models of waste management on the table.



We are so focused on trying to manage the volume of waste at this point in time that we haven't even looked at open burning waste.

- Interview with Karl Van Reenen, 2024

The City of Cape Town leans on its robust governance system to ensure that basic service delivery is well managed, and room for innovation to keep up with guidance from thought leaders in the sector is evident. In Kenya, the national government's drive to support and prioritise circular waste management has transformed the policy landscape. In other cities and countries, local government champions are also taking the lead in creating enabling environments to address waste management challenges. In Accra, the vision to divert organic waste from landfill sites is underway, and in Lusaka, innovative activities such as auctions have been leveraged to raise awareness for better waste management practices.

In each of these cities, the driving forces behind open waste burning differ significantly but it is clear that neither urban residents nor local governments burn waste because they merely lack care for their environment. Root causes differ based on the needs of various individuals at the household, community or industrial scale.



In the majority of African cities, the driving forces behind open waste burning have included:

- The lack of, unreliable, slow or limited waste collection services in comparison to the volume of waste produced. The need for flammable materials to make fires for cooking and warmth.
- The urgent need to reduce growing waste volumes.
- The lack of or limited waste disposal infrastructure.
- A limited understanding of the significant impact of burning waste materials including the lack of knowledge regarding the direct harmful effects on human health.
- The need to make a living from extracting materials from waste products for sale.
- Entrenched attitudes and practices which take longer to change.



When you go there to do awareness and education about waste, people say: “you’re telling me about waste, and I’m unemployed. Employ me so that I can look after whoever is dumping. Otherwise, if you don’t employ me, I’m going to continue dumping.”

- Interview with Mayedawa Perhe, 2024



On the ground, we have a problem in terms of my team speaking to people about what is the right thing, but the right thing is not supported by enough infrastructure; neither is the right thing supported by the resources, in terms of our services being in abundance, in order to resolve a issue of illegal dumping.

- Interview with Leander Van Oordt, 2024

Enforcement in waste management is a challenge faced by many cities, but each city has found ways to adapt to the challenges experienced. To regulate open waste burning, local government officials can enforce by-laws to address prohibited activities and use legislation to discourage open waste burning. Guidance on drafting by-laws can be learned from Accra and Cape Town.

In the context of Accra, the Accra Metropolitan Assembly (Sanitation) By-law (2017) explicitly states under offences that a person commits an offence if that person “Indiscriminately dumps solid and liquid waste in open spaces, drains, gutters, behind walls, or burns solid waste in one’s compound”. The 2017 Sanitation by-law regulates open burning activities by penalising offenders. The by-law mentions that the AMA can penalise offenders of open waste burning and dumping with 100 penalty units minimum, 150 penalty units maximum, 3-6 months jail time, or both penalty and jail time (Accra Metropolitan Assembly, 2022).

The City of Cape Town’s by-laws do not solely focus on addressing open waste burning, but rather pollution. While there is value in including prohibiting open waste burning, the existing by-laws can be applied to stop people from burning waste, in alignment with the City’s awareness raising activities. Reference can be made to the City’s Integrated Waste Management By-law (2013), and the Air Quality Management By-law (2016). Additional legislation that the City leverages includes the the City’s Air Quality Management Plan of 2024, the Air Quality Act [No. 39 of 2004], and the Atmospheric Pollution Prevention Act 1965 [Act 45 of 1965], amongst others.

In addition to the use of by-laws, local governments that are mandated to facilitate waste management can take guidance from national governments and leverage partnerships in the waste sector to support their efforts. In South Africa, the Department of Environmental Affairs receives guidance through its National Waste Management Strategy which outlines 8 goals for improving waste management, this includes ensuring efficient waste service delivery (goal 2) and a healthy environment which does not negatively impact the health and well-being of citizens (goal 4) (Kubanza and Simatele, 2019). Kubanza and Simatele (2019) note the important role that local governments and NGOs play in realising these goals. In Kenya, the National government has encouraged a circular economy approach and subsequently guided counties to practise sustainable waste management. **By 2035, it is projected that Kenya’s ban on open burning and landfilling, and initiatives on waste-to-biogas will lower greenhouse gas emissions by 1.1 million tons and PM2.5 emissions by 30%. (Abubakar, 2022).**



There was a bill that was passed to ban open burning as well as the use of plastic paper bags in Kenya. When the bill was passed it was declared that it is illegal to do open burning. That helps the county in terms of enforcement and monitoring.

- Interview with Lesley Karwitha, 2024

The above by-laws are vital for regulating activities but they are not the only effective tool which local government authorities can adopt to address open burning challenges. Leading with effective awareness raising efforts is valuable in encouraging people to practice sustainable waste management, rather than addressing the challenge once an offence has already been committed.

Most cities have implemented awareness-raising campaigns which show evidence of an understanding of how to address the challenge of open waste burning. For the City of Cape Town, the priority is to address the root causes of many waste management challenges. For example, they have identified that tackling the challenge does not solely lie in identifying waste as a cause for system blockages, but rather in understanding that people's behaviour leads to waste dumping which in turn blocks sewer systems, leading to flooding. They were then able to direct efforts towards understanding why people were dumping and burning waste, and the various limitations they faced, in order to offer appropriate messaging and solutions. The City created the Bingo mascot to support this messaging. Bingo was instrumental in communicating about waste management during the City's Spring Cleaning Campaign (see more about this under the "Evidence-based campaigns" section). In some instances, stakeholders do not know what the authorising environment is for various waste management issues, therefore creating opportunities to share messaging is valuable.

In each city, it is evident that partnering with a range of departments, units and non-government actors is very important for successful awareness raising. While this framework focuses on open waste burning, the solutions for open waste burning have co-benefits for addressing challenges in other areas of waste management and adopting new sustainable practices, including making the transition to a circular economy, adopting a zero-waste framework, or practising sustainability. This makes addressing open waste burning an even more valuable endeavour.



We are actually doing almost like an on site type of exhibition, where we put up an exhibition, whether it is a table and gazebos or whether it's a fancy thing in terms of getting other people involved... whether it's next to a toilet or on the corner, that is the movement of how we're bringing the service of awareness to the community, but the information to the community.

- Interview with Leander Van Oordt, 2024.

Communication principles

Effective communication is crucial for raising awareness and promoting behaviour change. Messages designed to address open waste burning should therefore be clear, accurate, and motivating. Adhering to key communication principles can ensure that efforts to eliminate open waste burning resonate with the audience and inspire meaningful action. Below are some key principles to consider and apply when implementing awareness-raising activities (CoJ and ICLEI Africa, 2020; ICLEI Africa, 2022):

1. Segment the audience

A range of stakeholders can benefit from open waste burning messages. Some may be perpetrators of open burning, while others may be regulators and enforcers responsible for controlling incidences of burning. As a result, each group of stakeholders may require different messaging. Segmentation of the audience can help with communicating messages which are appropriate to a specific stakeholder group. Their capabilities may also be different, making it important to know the target audience and tailor messages to their disposition regarding the topic at hand. For example, the structure of messages shared with primary school children may differ from messages shared with older secondary school children who may benefit from more detailed messaging about the negative impacts of burning waste.

2. Connect with what matters to, and resonates with the audience (be aware of context)

Open waste burning has largely been attributed to poor waste management, but other factors such as traditional practices and economic drivers are also key reasons why individuals burn waste. It is therefore important to be sensitive towards the impact of a message on existing practices. Considering these drivers can form the foundation of solutions and appropriate messaging to end open waste burning.

3. Use simple and clear language

Your audience may not be familiar with the terminology used within the government, or the reasoning behind the implementation of an action, therefore:

- Tailor your messaging to the audience by simplifying the language and being clear about the actions people should take and consequences for poor actions.
- Align the language with the different departments and stakeholders involved to ensure a unified message is communicated to communities.
- Strip down your messaging to one core idea.

4. Identify a few relevant messages and be consistent

Consistent messaging is a powerful tool for familiarising people with a key message being conveyed. Narrowing down the key message to be communicated and sharing this consistently with people over an extended period of time contributes to embedding a message in people's subconscious.

5. Base messages on comprehensive and reliable research

Messaging that is based on factual evidence can be highly impactful. In such instances, leading with known information is key, therefore focus on what is "known" before tackling what is "unknown". In the case of open waste burning, identify the primary causes and collect data to inform decision making.

6. Use storytelling and tell relatable stories

Use relevant, impactful images and graphics to support your story to make it real and captivating to the audience. (*Learn from Elizabeth Kperrim's Video on the impacts of [open waste burning on community stakeholders](#), submitted under the Open Burning Awareness Raising Grant.*) People respond to stories and narratives which give them a clear picture of the challenge at hand or the opportunity to take.

7. Deliver benefits people want, not just information

Encouraging people to change their behaviour is challenging if the new behaviour requires significant changes or leads to discomfort and limitations. Emphasise the benefits that come from taking certain actions, so that people may prioritise these actions.

8. Empower your audience by providing solutions to enable behaviour change

Providing practical solutions and guidance for how people can take action, such as separating waste at source, is needed to keep the momentum created by raising awareness and educating people. Additionally, getting community members to understand the challenge of open waste burning is very important. As individuals learn the value of communicating about a challenge they are more inclined to share the message and encourage peers to correct their actions.

9. Incorporate monitoring, evaluation and learning (MEL)

MEL is required to track the reduction of open waste burning and the uptake of circular or sustainable waste management practices and test the effectiveness of awareness-raising campaigns and interventions. It is important to be intentional about identifying the changes expected and monitoring progress over time to demonstrate the progress that has been made in efforts to reduce open waste burning and demonstrate further work required to reach the goal of eliminating poor waste management practices.

Evidence-based campaigns

Developing campaigns which are rooted in contextual evidence is necessary for successful awareness raising, as detailed in the sections above. Open waste burning is one component of the waste management challenges faced by African cities. Addressing this challenge requires a true understanding of the root causes of open waste burning. Thus every campaign to address the challenge will be different, focusing on different messages guided by locally driven causes for open waste burning.

At present, open waste burning poses a threat to environmental and human health. Furthermore, it is linked to a loss of valuable resources which can re-enter the material loop as valorised products. The majority of waste that is burned can be recovered, reused, and recycled, but unfortunately, only approximately 4% of waste on the African continent is recycled. The majority of waste reclaimed for recycling is conducted by reclaimers in the informal sector and in waste cooperatives, which are largely undervalued by society. In a continent where job creation is a challenge, all actors who contribute to this value chain should be respected. In recent years, the integration of waste pickers into municipal solid waste management systems has gained attention. In addition to the benefits for waste pickers, there is a valuable opportunity for local governments to design innovative interventions that integrate waste pickers into municipal solid waste management activities in an effective manner.

As a local government, the following alternative practices can be communicated to communities. In addition, local governments can lead by example in implementing similar projects as well.



The following systems and approaches can contribute to sustainable waste management:

- Investing in separation at source
- Building material recovery facilities
- Reviewing existing procurement protocols within local governments to incorporate circular economy and zero waste practices
- Investing in awareness raising within government and within communities



Encourage the following alternative disposal practices to open burning:

- Recycling
- Composting
- Reuse
- Local waste collection

***Using regular waste management campaigns to encourage recycling:
The City of Cape Town's waste management campaigns***

The City of Cape Town is one of the leading cities across the continent addressing waste management challenges through campaigns. The City runs two campaigns annually known as the Spring Cleaning Campaign and the Winter Readiness Campaign.

The **Spring Cleaning Campaign** takes place from September to November. It encourages residents, schools, community groups and businesses to keep the city clean by making use of the City's waste disposal infrastructure instead of illegally dumping waste in open spaces (van Oordt, CCT, 2024; Perhe, CCT, 2024).

The 'Bingo Mascot' designed and developed by the City, and endorsed by the mayor, was introduced in 2023, reinforcing the city's anti-littering message, and promoting awareness around recycling and proper waste disposal. The campaign's primary target audience is school-going children. The mascot messaging aligns with the City's Integrated Development Plan (IDP) to keep Cape Town clean (van Oordt, CCT, 2024).



Image 1: The City of Cape Town has used Instagram as one of the platforms to communicate about the Spring Cleaning Campaign, sharing city cleaning activities and the importance of caring for the environment.

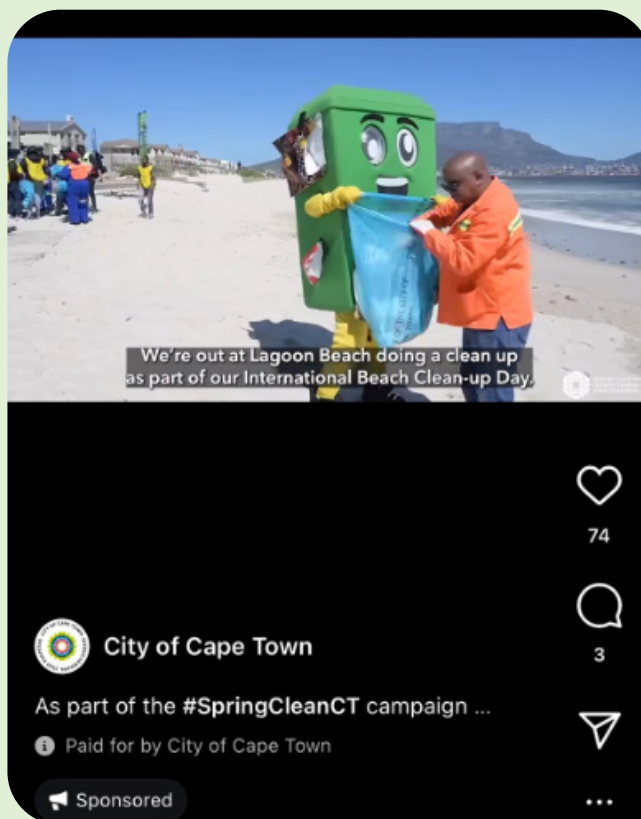


Image 2: A signpost in the city showing Bingo the mascot encouraging city residents to bin their waste.

The City of Cape Town's **Winter Readiness Programme** ran from [29 April to 31 October 2024](#), and is designed to address specific challenges faced by vulnerable communities, particularly in informal settlements, during the winter months (van Oordt, CCT, 2024). The programme focuses on:



Fire prevention: Due to the high risk of fires in informal settlements, the programme includes engagements with communities to educate them on precautionary safety measures to take when there is a fire (Perhe, CCT, 2024). This includes reducing the risk of fires, which are often used for cooking and heating purposes.



Flood prevention and stormwater maintenance: Illegal dumping of waste causes blockages in stormwater drainage systems, leading to flooding during winter rainy seasons. As part of the programme, drains are cleared, preventing stormwater blockages and potential flooding (van Oordt, CCT, 2024).

Changing People's Perceptions of Waste Through Art: Lusaka's Waste No Waste Auction

Waste production in Lusaka, Zambia is very high. A factsheet by the United Nations estimated that the city produces approximately 1,200 tonnes of waste daily, and only 480 tonnes are collected for disposal at disposal sites, with a very limited amount of 24 tonnes recycled at identified disposal sites. The high rates of material consumption and improper disposal in the city are having negative impacts on the city's infrastructure and environmental health.

Keen to address these challenges, various stakeholders in the city have taken the initiative to find innovative solutions aimed at reducing littering around the city. In June 2024, the Waste No Waste auction was hosted to encourage better waste practices in the city. During this auction, 130,000.00 Zambian Kwacha was raised from auctioning oil-painted drums which were designed by local Zambian artists. Local artists painted their drums with encouraging messaging on recycling, sustainability and care for the environment. The auction thus encouraged urban residents to take the initiative in not dumping waste but rather recycling it ([Lungu, 2024](#)).



Image 1: *Drum painted to encourage residents to recycle waste for the benefit of their environment.*



Image 2: *Mayor Chilando Chitangala with auction attendees standing behind a drum painted to inspire a love for the environment.*

***The Accra Metropolitan Assembly discourages open waste burning:
The Air Pollution Sensitisation Manual for Environmental Health and
Health Promotion Officers***

Having on-the-ground technical staff is a cost-effective approach to getting messaging about environmental harm and pollution directly to individuals. The AMA has approximately 30 staff responsible for going into the city's various neighbourhoods' open waste burning or pollution hotspots to discourage open waste burning. The health promotion officers are equipped with a guide which provides factual evidence about the dangers of open waste burning and other air pollution ills. The manual covers what air pollution is, its sources, and air pollutants. It also includes guidance on air pollution mitigation measures and the steps that can be taken to sensitise communities about air pollution mitigation.



***We wish we could have had more
[environmental officers]. Accra
Metropolitan Assembly is huge. And we
have less than 30 officers. So human
resource wise it is inadequate.***

- Interview with Florence Kuuyi, 2024.

Leveraging community meetings and community gatherings to encourage behavioural change

Drawing on an experience in a community meeting in Accra, the following section showcases how a community meeting can be leveraged as an opportunity to share information and guidance for open waste burning.

Demonstrate waste separation at source during community meetings. Carry two bins and examples of waste materials to showcase how waste can be separated.. This is a useful approach in showing community members how waste can be sorted, the types of materials that can be sorted, and the usefulness of the process to wider society.

During such meetings, it would be useful to identify stakeholders within the community who recover materials to present what they do, and how they benefit from the actions taken by residents in the precincts or neighbourhoods where they work.

Host masterclasses to communicate how residents can valorise waste at the household level. Masterclasses can be hosted according to different waste streams, e.g. organic waste, paper, plastic, etc.



Image: Community meeting in the Accra Metropolitan Assembly where local government officials are engaging with the community on waste management issues. During this meeting, a community representative reports about open burning challenges, noting the need for enforcement and the role he has played in telling fellow community members to stop burning waste.

Tackling Open Burning in Blantyre: A Collaborative Approach by WASTE Advisers and Blantyre City Council

Case study authored by John Chome, Idrissa Nkwanda, and Billy Bray

To address the persistent issue of open burning at the Mzedi dumpsite in Blantyre City Malawi, WASTE Advisers, in partnership with Blantyre City Council (BCC), has implemented a comprehensive strategy to strengthen the waste value chain from source to disposal. This initiative focuses on waste separation, recycling, and public awareness to minimize waste reaching the dumpsite while addressing the root causes of open burning. A key component of the program is promoting waste separation at the household and community levels. Residents are encouraged to use waste separation bags for organic and inorganic materials, while public spaces are equipped with waste separation bins. This separated waste is collected and transported to recycling centers, where recyclables are processed into value-added products, such as school desks made from HDPE plastics. Informal waste pickers benefit from this system by collecting and selling recyclables, providing them with a sustainable income and diverting materials away from the dumpsite.



Figure 1: WASTE separation bag



Figure 2: WASTE Separation bins in public place



Figure 3: Public awareness campaign by WASTE Advisers and Blantyre City Council

To further encourage waste separation and reduce open burning, WASTE Advisers partnered with Capital Radio to create an engaging radio series. This series included live recordings from Mzedi dumpsite involving waste pickers and roundtable discussions with policymakers, community members, and waste pickers. The program focused on raising awareness about the dangers of open burning and the benefits of waste separation, recycling, and upcycling. Through this platform, BCC also sensitized the public about the city's by-laws prohibiting open burning and highlighted the importance of compliance for environmental health.

WASTE Advisers has complemented these efforts by educating informal waste pickers about the health and environmental risks of open burning. By reducing the volume of waste reaching Mzedi through recycling and upcycling initiatives, the project not only tackles open burning but also creates economic opportunities for waste pickers, who now collect recyclables from the city's separation bins and bags instead of scavenging at the dumpsite.

This collaborative approach by WASTE Advisers and Blantyre City Council demonstrates that addressing open burning requires both systemic interventions and community engagement. Together, they are building a cleaner, healthier, and more sustainable waste management system for Blantyre.

5 Messaging to discourage open waste burning

The key to successful language for awareness raising is simplicity. Additionally, materials should be tailored to age groups, economic groups, as well as language groups. It is important to ensure that messaging is accessible. The following messaging can be tailored to fit any city context looking to raise awareness and nudge people towards changes in behaviour.

Messaging for government departments

Local governments are closest to the communities they serve, and need to understand their role in fostering awareness to encourage behavioural change and uptake of more sustainable practices within a city and/or community. Local governments play a critical role in informing citizens about activities that present a risk to their health and how to overcome these challenges.

The following list offers guidance for raising internal awareness on open waste burning in local government, and on how to pitch open waste burning as an urgent challenge to relevant government officials and departments.

1. Change the way that open burning is communicated. Instead of referring to just “uncontrolled fires”, categorise the activity as “open burning of waste”.
2. Find opportunities to approach other departments and government officials about open waste burning, and consider asking the following:
 - Do you know what open waste burning is?
 - Do you know why people burn waste?
(Be sensitive to cultural practices that have traditionally involved open waste burning.)
 - Do you know how addressing the challenge of open waste burning aligns to your department? (e.g. How can your department turn waste into local jobs?)

3. Consider using some of these messages to communicate about open burning within local government structures:

- Reduce open waste burning by 2030 by:
 - i. diverting waste from landfills
 - ii. recycling waste
 - iii. using waste as a secondary input in various value chains
- Eliminate open waste burning by 2040 (AMCEN, 2022)
- Lead by example: Report incidents of open waste burning to your local authorities. (Adapt this message to point readers to the relevant authority mandated to enforce the law by educating and prosecuting offenders who burn waste.)
- Open waste burning pollutes the air OR open burning harms air quality
- By reducing open waste burning, we can help protect the health of the local community
- Open waste burning is not just a waste management issue - it has public health, environmental and economic impacts

4. Include messaging to discourage open waste burning in your unit or department's plans and policies (e.g. waste management action plans, climate change strategies, integrated development plans, air quality management plans, etc.). Opportunities to use the above messaging includes:

- During meetings where waste management is discussed
- Meetings where climate action is on the agenda
- During both formal and informal bilateral engagements
- Government materials such as newsletter and notice boards
- Further relevant opportunities can be identified in alignment with existing governance structures

Messaging for communities

It is beneficial for the messaging shared with communities to be short, clear, impactful and based on evidence, which is communicated appropriately.

The messaging below can be tailored to different audiences and contexts to discourage open burning as a waste disposal practice and to encourage sustainable uses of waste at the household or community level.

- Stop open burning / Stop open waste burning
- Be a hero. Do not burn your waste. Contact your local recycling company
- Do you have a zero waste initiative that you would like to implement or scale up? Reach out to your local authority to find out what support is available for your business idea
- (Adapt this message to guide entrepreneurs to the relevant government entities that provide business support, and the relevant departments that can offer partnership or collaboration opportunities and incentives.)
- End open waste burning by recycling your waste
- You would not allow your child/family to breathe in smoke from a fire, so don't burn waste
- You would not throw litter in your own yard, so do not dump or pollute the air by burning waste
- Open dumping leads to open burning. Take your waste to a material recovery facility
- Say no to open burning, say yes to a clean and healthy environment!
- Turn your organic waste into compost for your vegetable or flower garden
- Open waste burning pollutes the air we breathe
- Reach out to your local government to find out how you can positively contribute to reducing open waste burning
- It is a community effort: Join us in reducing open waste burning
- Take action: Report incidents of open waste burning to your local authority
- Open waste burning causes disease and illness. Be part of the change. Stop open waste burning

Valuable waste management statistics for open waste burning

To support the above messages, the statistics below can be used in alignment with municipal/ local government goals:

- AMCEN has set the goal to reduce open waste burning by 60% by 2030 and to eliminate open waste burning entirely by 2040
- UNEP's 2018 report on waste management states that approximately 70% of waste in most African cities was disposed of through open burning, which was largely attributed to the lack of formal waste management services for urban residents
- The World Bank report What a Waste 2.0 showed that 50% of waste generated in African cities was openly burned
- AfDB in 2016 found that in countries such as Kenya and Uganda, at least 80% of waste was disposed of through burning
- Due to exposure to air pollution, it is estimated that there are over 1.2 million deaths per annum on the continent which result from the damaging chemicals and particulate matter in the air



The list below identifies relevant international campaigns which local government authorities can align to:

1. AMCEN's goal to eliminate open burning by 2040

The African Ministerial Conference on the Environment has set a goal to eliminate open waste burning by 2040. The aim of this goal is to tackle environmental and public health hazards posed by open burning which emits harmful pollutants, significantly contributing to air pollution and climate change, affecting urbanising cities in Africa (Engineering X). It is expected that open burning will be reduced by 60% by 2030.

2. The United Nations Sustainable Development Goals (SDG) 2030

Goal 3 (Good Health and Well-being): Open waste burning emits harmful pollutants that affect air quality causing public health concerns.

Goal 11 (Sustainable Cities and Communities): Addressing open burning is directly relevant to this goal as target 11.6 aims to reduce the environmental impact of cities, with a specific focus on waste management and air quality.

Goal 12 (Responsible consumption and production): This goal advocates for the efficient use and sustainable management of natural resources as well as prioritises the reduction of waste generation and the responsible management of waste.

Goal 13 (Climate Action): Open burning of waste contributes to greenhouse gas emissions e.g. black carbon, carbon dioxide etc. exacerbating climate change. A focus on reducing emissions and proper waste management is in alignment with climate mitigation efforts.



3. The United Nations Paris Agreement

In alignment with global efforts to tackle climate change, the Paris Agreement aims to limit global temperature increase and reduce greenhouse gas emissions. Open waste burning contributes to the release of significant amounts of greenhouse gases that contribute to global warming.

4. Stockholm Convention on Persistent Organic Pollutants (POPs)

Open waste burning releases persistent organic pollutants which are toxic chemicals with detrimental and long-lasting negative impacts on human health and the environment. This convention aims to eliminate these pollutants.

5. Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal

This convention makes reference to uncontrolled thermal processes such as the open burning of waste metal cables insulated or coated with plastics. It focuses on minimising the generation and harmful disposal of hazardous waste and further encourages environmentally sound waste management practices.

In addition to the above list of commitments made in international fora, opportunities for awareness raising can be aligned to international or national campaign days for environmental health, waste management and sustainability.



The list below includes international commitments to which local governments can align the topic of open waste burning:

1. International Day of Zero Waste (30 March)

This day promotes zero-waste strategies, reduction of waste generation and sustainable waste disposal methods, thus promoting alternatives to open waste burning.

2. Earth Day (22 April)

This day advocates for environmental protection, and frequently revolves around climate action and sustainability.

3. World Environment Day (05 June)

This day aims to promote awareness and action for environmental protection. Each year a different theme is selected to highlight specific environmental concerns.

4. International Day of Clean Air for Blue Skies (07 September)

This day raises awareness and advocates for actions to improve global air quality.

5. World Cities Day (31 October)

This day aims to promote awareness of urbanisation challenges and the need for sustainable urban development.

Some hashtags that are currently in use on social media to address the open burning of waste on the continent include:

#EndOpenBurning

#EliminateOpenBurning

#SayNoToOpenBurning

#StopOpenBurning

#AirPollution

#ReduceAirPollution

Transitioning from awareness raising to behavioural change

Awareness raising refers to knowledge sharing and education about a particular topic or issue. It largely focuses on sharing valuable information with the intention of getting a message across and prompting a person or group of people to make changes in their lifestyle, approaches, or thinking.

Behavioural change, on the other hand, refers to a long-term process in which a group of people or a system makes changes towards a desired behaviour. It often involves a change in attitude and perceptions of an issue which ultimately motivates a person or group of people to change their behaviour.

Awareness raising is a very important aspect of behavioural change. It forms the basis of communicating valuable knowledge to encourage people to change behaviour towards an ideal goal. Awareness raising does not always result in behavioural change, but good awareness raising certainly sets the foundation to do so.

The goal of awareness raising is to increase the knowledge of the target audience. In order to ensure that they take up the “change” necessitated by a project, they also need to be provided with the right tools and resources to apply the knowledge shared with them.

Behavioural change requires long-term thinking and long-term perspective. It is certainly harder to implement and to track success when compared to awareness raising. Both approaches require strong communication tools to share messaging, and robust methods for monitoring, evaluation and continual improvement. Effective strategies and projects will often consider both aspects to achieve success - considering the aspects that make each successful with the aim of maximising their value.

The table below presents the overall differences between the two approaches which are related but have different goals:

	Awareness raising	Behavioural change
<i>Definition</i>	The process of sharing information with a stakeholder group to increase knowledge of a topic or issue	The long-term process of changing attitudes and practices.
<i>Methods</i>	Approaches include campaigns and exhibitions	Activities include awareness raising, enforcement, and action-based activities
<i>Common indicators</i>	Awareness can be measured by using surveys, interviews, questionnaires, polls etc. to test people's understanding of a specific topic. An increase in awareness increases the familiarity of a topic but does not necessarily mean that behavioural change has been achieved	Indicators for behavioural change would include long-term shifts in behaviour from negative habits to more sustainable habits. Measuring behaviour change is challenging as human behaviour is complex and is influenced by numerous factors which are difficult to gauge.

Behavioural change in waste management can be remedied through the provision of actionable opportunities and improving access to waste management services.

For example:

- In order for people in low-income neighbourhoods to stop open waste burning, the provision of adequate waste disposal infrastructure is required, combined with a regular waste collection service to prevent waste accumulating.
- In order for waste reclaimers to stop burning waste to access resources (e.g. copper for electronic materials), an enabling environment for innovative entrepreneurship opportunities should be facilitated. This can include incentivising circular economy and zero waste interventions

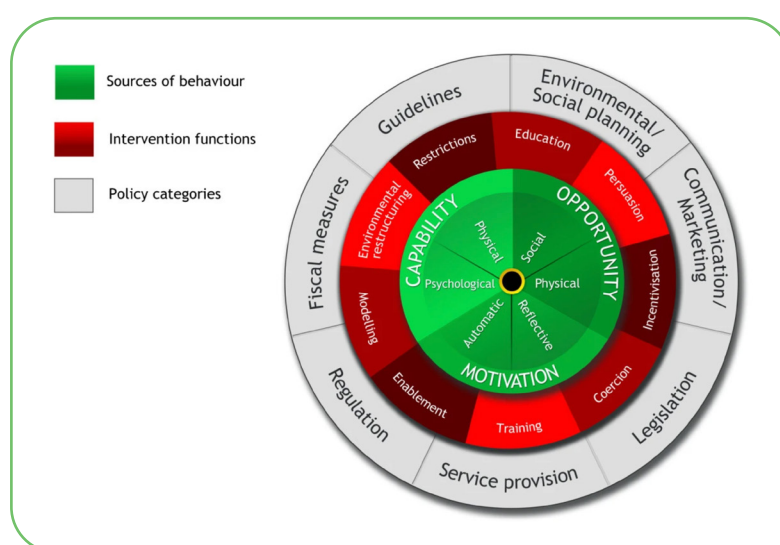
Valuable waste management statistics for open waste burning

The behaviour change wheel is a simple tool which provides guidance to develop an actionable plan towards implementing behaviour change. Based on social theory, the behaviour change wheel identifies components of behavioural change to guide users of the tool towards outlining a plan of action and an approach to achieve implementation.

Capability, Opportunity, and Motivation are the key components of behavioural change, and they make up the COM-B approach. This approach allows a user to identify sources of a behaviour that they would like changed, outline intervention functions (see image below), and support them with appropriate policy actions.

The behaviour change wheel can be used for:

- Developing a framework for behavioural change which is based on theory and evidence.
- Creating an implementation guide which is rooted in an identified problem and guided by evidence towards intervention.
- Categorising existing interventions for the purposes of analysing, synthesising and comparing interventions and their impacts.



Click on the image to access the resource or follow this link:

<https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-6-42>

The behaviour change wheel is designed to help the user chart an intervention journey that considers how capability, opportunity, and motivation can influence behaviour. The wheel has 3 interlinked components.

- The first and central layer of the wheel focuses on the sources of behaviour.
- The second component of the wheel focuses on intervention functions.
- The last layer of the wheel focuses on policy categories for intervention.

All the layers of the wheel can be used in any order to design an intervention, which can be determined and informed by the desired behaviour change outcome. The table below summarises actions that can be adopted to eliminate open waste burning.

Taking action to eliminate open waste burning

Identify and tackle the root causes and drivers of open burning	Develop waste management action plans with realistic short, medium and long-term goals to end open burning	Collaborate within local government structures to break down silos	Incentivise civil society and the private sector to take action against open burning through partnerships
<p>Use:</p> <ul style="list-style-type: none"> • Root cause analysis • Systems mapping • Local surveys with a wide range of stakeholders 	<p>Use tools and frameworks to guide the development of practical and implementable evidence-based plans:</p> <ul style="list-style-type: none"> • Systems thinking tools • Behaviour change frameworks • Existing legislation 	<p>e.g. To tackle illegal burning in informal settlements, a collaborative approach is taken in CCT that involves air quality, law enforcement, metal theft unit, and fire departments officials as well as residents who are encouraged to report any burning they see to the City. (Interview with Fundiswa Sandi, 2024; Interview with Ian Gildenhuys, 2024)</p>	<p>e.g. Integrating the informal sector, as achieved by the Accra Metropolitan Assembly</p>
Run a targeted open burning campaign	Develop well-tailored messages to discourage open burning	Provide infrastructure for appropriate waste disposal and management	Align open burning campaigns and initiatives with relevant existing campaigns
<p>e.g. Accra's World Environment Day campaign which focuses on improving air quality shares the harmful effects of open burning.</p> <p>Use:</p> <ul style="list-style-type: none"> • Checklist (see annex) • Awareness raising guide 	<p>e.g. Air pollution sensitisation manual from Accra</p> <p>Use:</p> <ul style="list-style-type: none"> • Awareness raising guide 	<p>e.g. CCT composting project</p>	<p>e.g. Case study: How Accra aligned with World Environmental Health Day</p>
Create a mascot for environmental or sustainability advocacy	Prioritise enforcement	Measure progress with a monitoring and evaluation plan	
<p>e.g. The City of Cape Town created Bingo to raise awareness for proper waste management practices</p> <p>Use:</p> <ul style="list-style-type: none"> • Identify low-cost innovative interventions that lead to the elimination of open burning e.g. Volunteering opportunities 	<p>Use by-laws as a tool to guide the enforcement of prohibited waste disposal practices.</p> <p>Upskill existing enforcement officers on open waste burning and related dangers, using awareness raising materials.</p>	<p>This is beneficial to track the uptake of information shared during awareness raising, the impact of changes on air quality, and making evidence-based decisions.</p> <p>Use:</p> <ul style="list-style-type: none"> • Adopt the Made in Africa evaluation methodology 	

Monitoring and evaluation

Monitoring and evaluation is a critical component of measuring the impact of awareness raising, and eventually achieving behavioural change. Adopting the correct framework for measuring progress towards eliminating open waste burning is necessary to ensure that change takes place on the ground, and the benefits of eliminating open burning directly impact communities and individuals.

Monitoring, evaluation and learning (MEL) has typically been designed to meet the needs of specific projects with the objective of ensuring that a project is successfully completed during a specified timeframe. It is often heavily focused on monitoring the outcomes of the project achievable within a short to medium term. Often, long-term impacts do not fall within project timelines and depend on post-project follow up and further resources to track impact - this is often when the fruits of implementation are observable. (Masvaure, Chirau, Fish, and Morkel, 2023).

Studies have shown that such models which follow a logic framework may support the needs of donors more than they do the needs of target communities. Upon further evaluation, it has been observed that such frameworks are often challenging to implement and localise in African contexts where the limitations to traditional data collection, capacity and systems are evident (Masvaure et.al, 2023:24). The result of applying traditional frameworks to such contexts has been a lack of focus on the role that communities can play and benefit from reducing open burning activities, and the applicability of suggested interventions (Masvaure et.al, 2023).

In response to these limitations, the Made in Africa evaluation approach emerged and has gained traction over the last decade. This approach has sought to address the limitations identified in the application of monitoring and evaluation frameworks. As an impact ecosystem framework, it specifically seeks to address the power dynamics at play which typically favour donors and project implementers, given that their design has mainly been top-down. This approach thus aimed to ensure that MEL is aligned with African practices, including cultures, beliefs and experiences (Masvaure, et.al , 2023).

We have identified the Made in Africa approach as a possible MEL framework to adopt when considering how awareness raising is positively contributing to behavioural change for open waste burning. This approach is useful for addressing open waste burning challenges given that:

- Data collection in African cities includes storytelling as a source of information.
- The causes of open burning are often rooted in traditional practices and urban fabrics with which LGAs have faced challenges.

Adopting monitoring and evaluation approaches which keep these in mind and outline ways of monitoring which are well aligned with local communities, is a valuable approach to undertake. Influential evaluations both inform decision making while transforming communities.

Monitoring, evaluation and learning can be approached differently by adopting an impact ecosystem framework which is designed to take into account the differences in the African context. For example, the performance of interventions can be monitored according to the indicators described in the table below.

	Behaviour change indicators	Reduction of harmful effects indicators
<i>Community (health)</i>	<ul style="list-style-type: none"> • Reach of communication (e.g. number of schools and communities, wards, and sub-councils you have shared a message with) 	
<i>Individual (health)</i>	<ul style="list-style-type: none"> • Number of individuals participating in campaigns and opportunities provided by the community • Number of communications assets reaching individuals 	<ul style="list-style-type: none"> • Householders separating waste at the household level • Individuals reporting health issues directly related to open burning
<i>Environmental (effective resource use)</i>	<ul style="list-style-type: none"> • Incentives and support provided to emerging waste businesses and initiatives • Number of zero waste and circular economy businesses receiving incentives and or support from local government authorities • Number of jobs created in the waste management sector 	<ul style="list-style-type: none"> • Air pollution attributable to open waste burning • SLCP contributions attributable to open waste burning
<i>Government (local and provincial)</i>	<ul style="list-style-type: none"> • Number of references to addressing open waste burning in policies and legislation • Amendments to by-laws to prevent open waste burning • Number of staff allocated to enforce laws against open burning and create open burning related legislation 	<ul style="list-style-type: none"> • Number of open burning incidents reported • Number of fines or prosecutions of open burning offenders • Waste collection rates • Waste diversion rates from landfill sites

One of the most effective solutions to addressing open waste burning lies in transforming waste management as a whole, particularly interventions that address air pollution and divert waste towards reclaimers and recyclers. Identifying tools and opportunities for solutions which can support the transformation of the waste management sector is a practical starting point.

The following tools were selected because they track interventions often implemented by local government authorities. They can be used to monitor waste management related emissions, and are particularly useful for tracking emissions and managing organic waste matter.

- **The Waste Characterization Handbook and Tool:** is a valuable resource for understanding how to characterise waste and analyse waste information.
- **Anaerobic Digestion Screening Tool (AD-ST):** This Excel-based tool is useful for assessing the potential feasibility of anaerobic digestion, which is often suggested as an alternative management approach for organic waste.
- **OrganEcs:** This is a useful tool for estimating the costs associated with an organic waste management project. It is designed for local government authorities, waste professionals, policymakers, facility operators, and project developers with the aim of supporting them at planning level using two Excel-based tools that provide guidance on financial decision making for potential projects.
- **Solid Waste Emissions Estimation Tool (SWEET):** SWEET is a useful tool for quantifying greenhouse gas emissions and other pollutants from sources in the waste sector. Open waste burning is one of the major contributors of black carbon, and additionally, organic waste matter is a major contributor to methane production. Tracking emissions is a useful tool to track a reduction in open waste burning. The following case study demonstrates how this tool was used in Accra, Ghana. The case study can be accessed [here](#).

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Annex: Valuable resources for local government authorities

Addressing open waste burning requires various interventions across the waste management system, as demonstrated in the framework above. Given this, the following tools have been identified as useful to guide local government officials in waste management to improve the waste management system or directly address open waste burning challenges.

Improving waste management

1. Zero waste initiatives and circular economy strategies for local governments

The ACE Africa project produced a series of circular economy ideas for local government practitioners. By encouraging these activities and taking the lead in implementing these solutions, local government practitioners address a range of waste management challenges faced.

<https://riseafrica.iclei.org/wp-content/uploads/2022/12/Circularity-Is-Government.pdf>

2. Guidelines for the development of waste management plans

This guideline for the development of waste management plans provides an overview of the advantages of a waste management strategy, guidance for an implementation journey, stakeholder engagement, and a guide to the steps required to prepare a waste management plan. https://stopopenburning.unitar.org/site/assets/files/1014/4-municipal_waste_management_plan_development-sep19-1.pdf. Further guidance and examples on open waste burning from UNITAR are accessible here: <https://stopopenburning.unitar.org/guidance-and-examples/>.

3. The Stockholm Convention and uPOPS from Open Burning

This presentation by UNITAR provides aligns the Stockholm Convention and Unintentional Persistent Organic Pollutants to open waste burning. It further provides guidance for the release of persistent organic pollutants.

https://stopopenburning.unitar.org/site/assets/files/1014/2-stockholm_convention_and_upops_from_open_burning-sep19-1.pdf

4. A Guidebook on Environmental Education

The African Clean Cities organisation has drafted a guidebook for environmental education targeted at disseminating waste management knowledge in schools.

https://www.africancleancities.org/sites/default/files/2023-06/1_Guidebook_for_Environmental_Education_on_Solid_Waste_Management_in_Africa.pdf

Checklist

A checklist is a valuable resource to ensure that a wide range of possible considerations are met. Communicating about open waste burning requires consideration of both the key message to be conveyed as well as valuable action steps that individuals should take.

The following checklist can be used to guide the implementation of a campaign to eliminate open waste burning. While this list has been designed to be comprehensive, it is meant to be a flexible tool which can be adjusted and refined to address nuanced challenges, opportunities and experiences at a local and/or regional level. Questions can be added to the list or adjusted based on the drivers of open waste burning in a municipality.

	Question	Response
1	What issue do you need to engage about?	
2	Who do you want to communicate with? Be as specific as possible.	
3	What is the behaviour or action you want the target audience to take?	
4	Is there a behaviour or action that needs to be discouraged? If yes, please elaborate	
5	Does the target audience perceive the issue as relevant to them?	<ul style="list-style-type: none"> • Yes • No
6	Does the target audience understand the benefits of adopting the recommended behaviours or policies?	<ul style="list-style-type: none"> • Yes • No
7	What channels does the audience prefer to use? List these	
8	What channels does the audience prefer to use? List these	
9	Are there partner channels that could be used to multiply the message?	
10	What resources are required to develop the products/ tools needed? List these	
11	Does your message clearly state the action and overarching campaign?	<ul style="list-style-type: none"> • Yes • No
12	How does this contribute to and align with the overarching campaign message?	
13	Has the campaign implementation team designed a monitoring and evaluation plan to track the success of the campaign?	<ul style="list-style-type: none"> • Yes • No