Innovations for Development in the
Regional Network for Equity in Health in East and
Southern Africa (EQUINET)

Turning waste into value: Plastics recycling in a circular economy in Kasangati Town Council, Uganda

A chair made out of plastic bottles and paper in Naalya-Magonja-Kasangati. M.I Kuteesa, 2022.

- A community-led initiative supported by Kasangati Town Council with Zero Waste Amazing Projects (ZWAP) Foundation, a local waste management agency, has trained over 2000 people in waste management and transformed plastic waste into valuable products.
- The initiative has built women and young people's skills in recycling and supported incomes, while also visibly reducing plastic pollution and protecting the environment.
- There are plans to widen the initiative through integration into the school curricula, expanding production, and, leveraged by the town council, promoting national environmental literacy.

A demand to address the rising level of urban plastic waste

Kasangati is in Nangabo sub-county, Wakiso district, in Uganda's Central Region. It is 13 kilometres northeast of Kampala and is a rapidly growing urban area. Between 2015 and 2020 its popu-lation grew by 6.7%, to 207 800 residents, with a further projected increase to 250 800 by 2023 (Brinkhoff, 2025; Wikipedia, 2025).

The town serves as a hub for commerce and public services, including the Kasangati Health Centre IV and a bustling central market (Wikipedia, 2025). However, the rise in population and economic activities has also brought mounting environmental challenges, including poor waste management and the accumulation of plastic waste (Kagoro, 2024).

EQUINET's recommendations on integrated urban health in 2024 in Eastern and Southern Africa include measures to **BUILD** and **ENABLE** health promoting integrated improvements for urban health, including those that link improved environments to health (EQUINET, 2024). This case study exemplifies the 'BUILD' and 'ENABLE' agenda through a town council and social enterprise support of local income generating plastic waste reduction and recycling.

The Zero Waste Amazing Projects (ZWAP) Foundation is a local agency located in Naalya-Magonja, in Kasangati Town Council. In 2013, and after his loss of an adopted 21-year-old Ugandan daughter to cancer, the ZWAP founder, Michael, conducted online searches and informally consulted with health workers about cancer and how it can be prevented. He found that poor waste management, especially the burning of plastics can cause various types of cancer, including breast, prostate and lung cancer due to inhalation and ingestion of toxic fumes from burning plastic (Orem, 2025).

Plastic waste dumping at Kiteezi landfill in Kasangati. Uganda Radio Network, 2020

These findings motivated Michael to initiate activities, first individually, and then from 2017 through a nationally registered social enterprise 'ZWAP foundation'. He drew ideas from online resources and others engaged in plastic upcycling to identify ways to transform plastic waste into useful, marketable products. The activities undertake innovative small-scale solutions to reduce, recycle and upcycle plastic waste to improve community wellbeing.

Implementing a local initiative on plastic waste

In May 2019, the initiative was extended to the wider Kasangati community through a training held at the founder's local church that drew over 350 participants. The Kasangati residents and the Kasangati town council endorsed the activities and worked collaboratively to establish the community-operated plastics recycling and upcycling initiatives described in this case study. The initiative uses a low-tech, labour-intensive model that enables meaningful participation from communities in low-resource settings. Local councils in Kasangati and in other towns and districts where ZWAP conducts activities, facilitate the work by offering access to public spaces for training, endorsing community mobilisation efforts, and helping identify community target groups and schools.

Participants are selected through community outreach and collaboration with local leaders, schools, and youth groups. With a focus on addressing economic vulnerability and promoting inclusive development, participation prioritises:

- Women from underserved, often rural areas within Kasangati Town Council. These are often unemployed women who can leverage the knowledge gained to create business opportunities and economic empowerment.
- Primary and secondary school students, particularly in Wakiso and Mukono Districts.
- Unemployed youth in low-income urban neighbourhoods of Kasangati.

Pupils picking plastic bottles to use for decoration in a primary school compound. C. Magezi, 2022.

The foundation sources plastic bottles and other recyclable materials from a network of local waste collectors, many operating near major dumpsites. The waste collectors form the back-bone of the initiative's supply chain. To support their safety and livelihoods, the foundation offers basic training on safe waste handling and pays waste collectors between UGX 700-1 000 for a kilogram of plastic bottles (or US$1 for about 4 kilograms).

Participants are taught how to safely handle and repurpose locally-sourced waste materials, including plastic bottles, caps, paper and tyres. Training in production is initially held in 3-7 day in-person workshops to build basic skills. Ongoing remote support via social media video calls guides practice, with follow-up visits after 2 to 3 months to assess progress and reinforce learning.

Production takes place in a semi-open workshop space in Kasangati, designed to allow natural ventilation and minimise exposure to plastic fumes. It does not use high-temperature industrial melting and basic safety protocols are followed, including the use of masks and gloves during cutting, sanding, or light heating. The foundation is keen to further strengthen safety measures.

A core team of 6 staff members (4 women and 2 men) oversees operations, including training, product design, and quality control. They are supported during periods of high production by 16 part-time paid assistants, primarily youth and women from Kasangati and surrounding communi-ties. The initiative draws feedback through consultation with participants during and after the training, dialogue with the town council and community meetings.

To broaden its reach and practices, the foundation leverages television and radio to raise public awareness and share practical tips that individuals can adopt at the household level. For instance, local station Gugudde TV regularly airs pre-recorded segments showcasing ZWAP's key approaches to repurposing plastic waste. Viewers are encouraged to call phone numbers shared during the broadcasts, for the foundation to hear public input and respond to community interest.

The up-cycled products and their use

The initiative makes chairs using 86 plastic bottles per unit. Plastic bottles, usually of 500ml, are gathered, cleaned and dried. The bottles are then tightly packed together and bound using strong tape to form the seat and backrest base. Cardboard is added to provide shape and strength, and then fabric (usually kitenge) is added around the structure for comfort and aesthetics.

Flower vases are made using plastic bottles combined with recycled paper from paper waste. Plastic bottles of various sizes are chosen depending on the desired vase shape. The bottles are covered with thick pulp made from soaked and mashed wastepaper. The pulp is moulded around the bottles to create texture and structure, then left to dry and harden. Once dry, the vase is decorated with paint, fabric, or natural materials.

Jewellery, especially earrings, are made from plastic bottles and caps. The plastic waste materials are collected, cleaned, and cut into decorative shapes, like petals or beads. The pieces are then sanded to create a smooth texture for painting, painted, and sometimes gently heated to create unique textures or curves. Holes are added, and the parts are assembled using thread, wire, or hooks to form earrings, necklaces, or bracelets.

Dumped tyres are used for decoration of recreation spaces, especially in schools, as in the adjacent photo. Used and worn-out tyres are painted and sometimes wrapped in colourful material and repurposed into swings, climbing structures and sandboxes for children in schools.The work in the adjacent photograph was completed by the Foundation team within a week.

Plastic bottles are collected and bound together to be used for making chairs, in Naalya-Magonja, Kasangati. M.I Kuteesa, 2022

The photo on the left shows earrings made from plastic waste in Kasangati. M.I Kuteesa, 2023
On the right, the photo shows a space at the Wildlife Education Centre in Entebbe decorated with tyres, plastic bottle tops and plastic bottles. M.I Kuteesa, 2022.

The foundation plans to scale up its work across all regions in Uganda and to register a waste management curriculum, from primary school level upwards. It plans to build a national database of 5 million trained waste practitioners. It aims to improve and widen production by introducing machine-assisted processes in jewellery production and technologies to crush and melt plastic waste into large boards that can be cut, shaped, or moulded into stronger, longer-lasting chairs and toilet seats. It also aims to expand its tyre reuse initiative to include the production of furniture and footwear for local markets and export to other African and European countries.

Outcomes and learning on enablers and challenges

The initiative has to date trained over 1,000 students and 450 community members in Kasangati town council and other areas of Uganda. The plastic waste clogging drains and environments has reduced due to increased waste collection. Households repurposing waste now spend less on local council fees to collect their waste. Women and youth have generated income from product sales in local markets, using the earnings to pay school fees and to buy food, healthcare, and housing, improving wellbeing. *"I am so happy with the training I underwent….selling the earings I made from plastics has helped me make money to use at school for daily upkeep."* Secondary school student, Mukono District, 2024.

There were challenges, in the scale of the initiative, an initial scepticism and lack of confidence from the community and limited external funding. These challenges were overcome through live demonstration of products and testimonials of success stories from early adopters, and product sales and strategic partnerships. There are plans to integrate machinery to increase production, such as equipment from South Africa for conversion of waste tyres into sandals and other products.

However, the initiative was enabled by strong community engagement and local leadership. Involving community members in its design and implementation built trust and relevance and fostered a sense of ownership that supports sustainability. The collaboration with schools, religious institutions and informal sector workers fostered a community-centred circular economy that promotes equity, environmental conservation, and youth empowerment. The use of accessible, low-tech methods minimised the need for expensive infrastructure or specialised skills. Ideas could be adopted and replicated using locally available materials and knowledge. A revenue-generating model producing marketable goods, the contribution of the founder and fees obtained for the training has sustained operations and created income streams that reduce dependency on external funding.

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