



Ministry of Water and Environment



ANNUAL Report 2023-2024



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Acronyms

ATC	Appropriate Technology Centre
BH	Borehole
BSFL	Black soldier Fly Larvae
CH ₄	Methane
DLG	District Local Government
GHG	Green House Gases
HDPE	High-Density Polyethylene
HPMA	Hand Pump Mechanics Association
LC	Local Council
LDPE	Low-Density Polyethylene
MWE	Ministry of Water and Environment
NDC	Nationally Determined Contributions
NDP	National Development Plan
N ₂ O	Nitrous Oxide
NGOs	Non Government Organisations
O&M	Operation and Maintenance
PEC	Portable Erosion Chlorinator
PET	Polyethylene Terephthalate
SDGs	Sustainable Development Goals
TAF	Technology Applicability Framework
WA	Water Aid
WASHE	Water, Sanitation, Hygiene and Environment

Message from the Permanent Secretary

In the period where the country is grappling with challenges of dwindling water quality and quantity, poor sanitation, poor solid waste management, deforestation and environmental pollution all with a bearing on climate change, technology development and transfer is very key as means of implementation towards the desired climate action specifically aimed at reducing the global temperatures to below 1.5°C. The continued water stress, loss of biodiversity, energy burden, health and agriculture related stresses are increasingly dominating the development landscape yet we are counting only six (06) years to end the Sustainable Development Goals (SDGs).

The Appropriate Technology Centre (ATC), under the Ministry of Water and Environment (MWE) is providing the needed action towards research and development and more so this gone year the Centre proactively took a bold step to transfer impactful technologies to the end-users in effort to trigger transformational change.

Despite financial uncertainties, the Centre continues to be resilient and dedicated to duly execute its mandate against all odds in partial contribution to fulfilment of the country's development agenda.



Dr. Alfred Okot Okidi
PERMANENT SECRETARY

Ministry of Water and Environment

FORWARD

I am pleased to share this year's annual report, highlighting the ATC's role in addressing the country's pressing and significant challenges.

The country is deep in the vicious cycle of climate related risks and disasters. The ATC takes advantage of these challenges to innovate towards lasting solutions.

The decision taken by the Centre to develop and transfer technologies closest to the end users led to accelerated knowledge/skills transfer and technology uptake.

The Centre is leading innovation and against the backdrop of increasing water, sanitation and environment challenges, we acted decisively to

focus on technology development and transfer. Our strategy was designed to increase community/grassroots resilience and adaptive capacity.

As the country struggles to achieve sustainable development, ATC will continue to address the ever-pressing technological needs and development concerns through innovation, applied research, technology development and transfer.



Prof. William Bazeyo

CHAIRPERSON STEERING COMMITTEE

PREFACE



The past year is one in which the Centre took decisive steps towards technology development and transfer. This was achieved through a comprehensive program that involved community engagement, education, skilling, coaching, provision of technical support and innovative subsidies for uptake of appropriate technologies. The results of such efforts were amazing i.e., 05 technologies were transferred to the end users and 3,652 people

benefited from the program. At school level, 2727 pupils in four (04) schools benefited from a program that specifically transferred appropriate technologies, knowledge and skill for solid waste management. Under applied research, 746 people benefited from the briquettes market survey and 20 institutions with an estimated total of 9,885 people benefited from the pit latrine functionality improvement study. Aside that, 03 new technologies for water quality enhancement were profiled and 03 new technologies for sustainable plastic waste management were developed.

Importantly, we remain convinced of the massive demand/need for appropriate technologies and this forms the basis of our interventions. We are delighted with the progress/steps so far taken in bridging the gap.

Despite the short-term headwinds for the Centre, there is much to be positive about as we enter FY2024/2025. ATC staff are dedicated to serving the country, employing flexible innovations and with the right support, we commit to continue fulfilling the Centre's mandate,

For God and My Country!

Ashabrick Nantege
ATC MANAGER

WHO WE ARE

The ATC for Water, Sanitation and Environment is the applied research arm established by the MWE to address technological challenges crippling access to safe water, sanitation, and promote environmental integrity in pursuit for sustainable development.

Mission

To be the leading Centre of excellence in research and development in water, sanitation and environment.

Vision

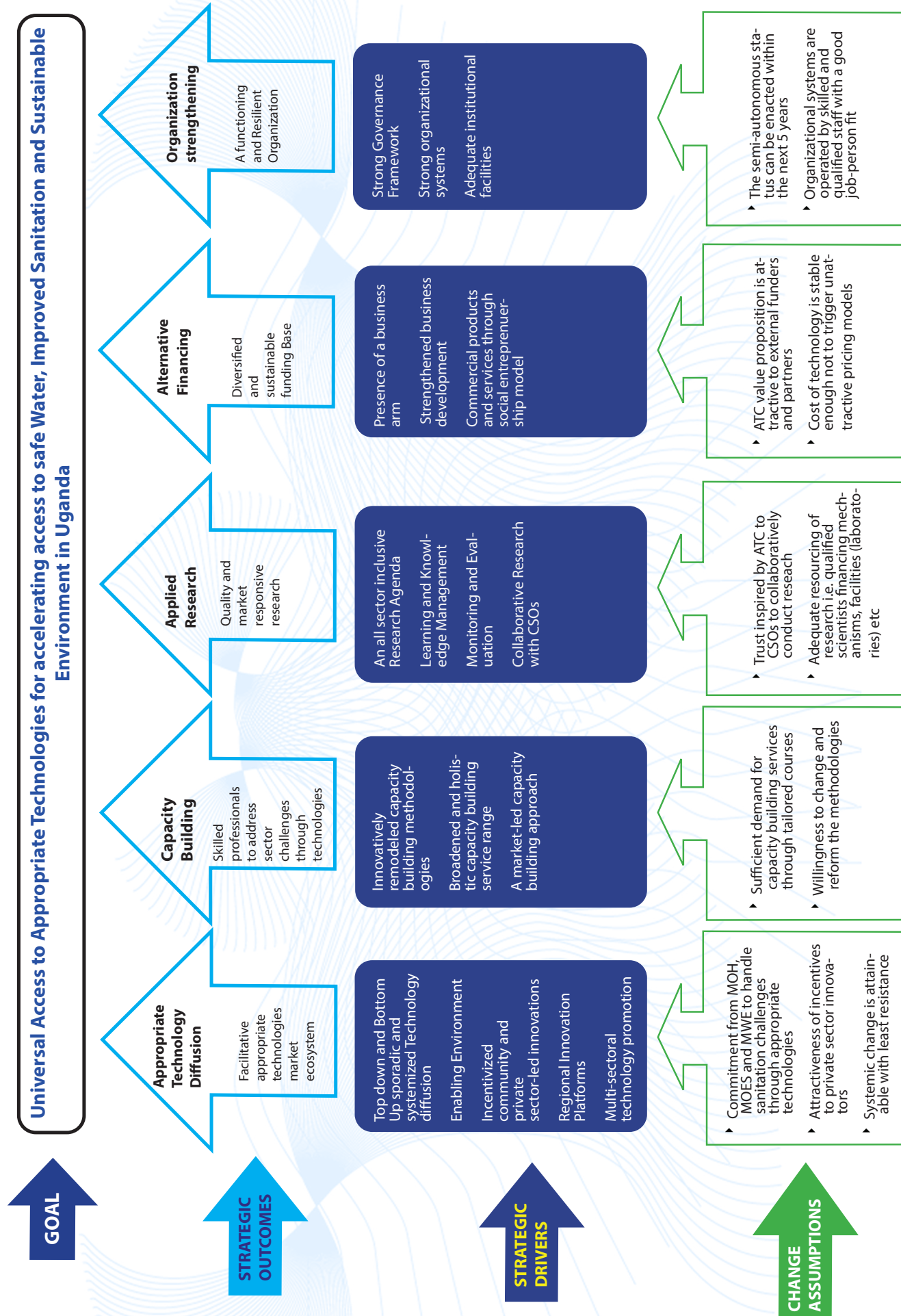
A water, Sanitation and Environment sector saturated with appropriate technologies.



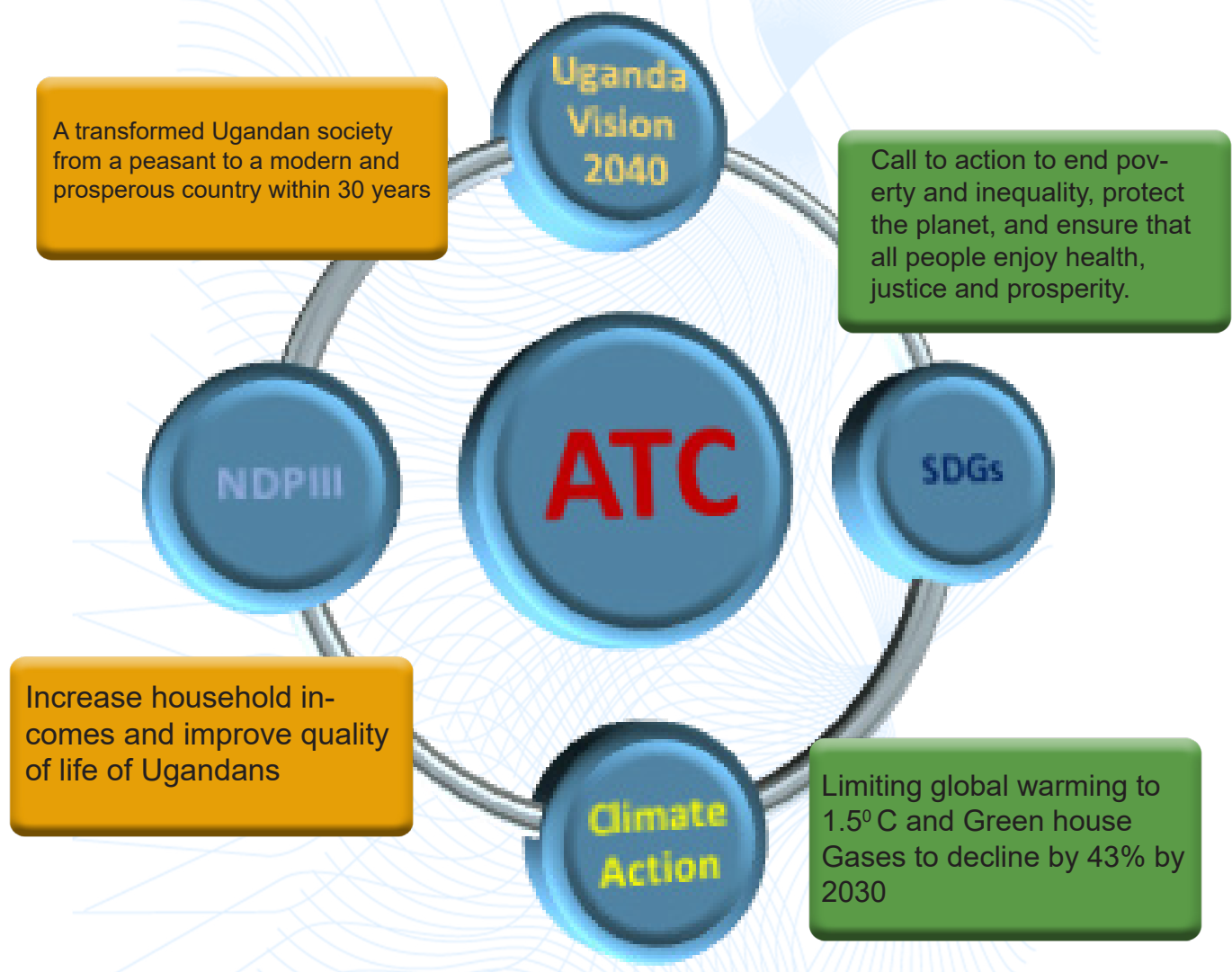
Institutional Objectives

- i) To undertake innovative applied research and development of appropriate technologies and approaches for water, sanitation and environment
- ii) To carry out capacity building of sector actors as a mechanism to strengthen appropriate technologies product and service chain
- iii) To build up the profile of appropriate technologies for sustainable water supply, sanitation and natural resource utilization
- iv) To demonstrate acceptable innovative practices and approaches through innovative financing mechanisms
- v) To continuously identify and address challenges facing adaptation of appropriate technologies in the water, sanitation and environment sector

ATC STRATEGIC PLAN



Contribution to the Development Agenda



ATC contribution

Inclusive growth

- Enhancing productivity and social wellbeing of the population
- Contributing to science, technological solutions and Innovation
- Increasing access to stable, reliable and affordable energy
- Enhancing skills and vocational development

Sustainability pillars

- Waste management
- Water management
- Alternative energy

The Financial Year 2023/2024 Highlights



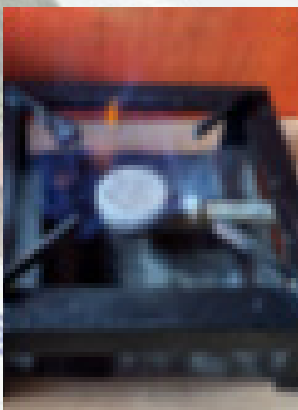
Technology Development

- 03 Technologies;
*Plastic Shredder
Plastic Extruder
Hydraulic press*



Technology Profiling

- 03 Technologies;
*Portable Erosion -
Chlorinator, uPVC
Poldaw pipes and
SV36*



Technology Transfer

- 05 Technologies;
*BSFL, Earth worms,
Biogas, Storm water
storage pond & construc-
tion using plastic composite*
- 3,652 people benefited



Applied Research & Pilot Studies

- 02 studies
*Bio-enzyme
Community up take
of briquettes*
- 9885 people benefited



Technology Demonstration

- 07 new prototypes installed at the Centre;
*Superstructures constructed using plastic composite, waste
drip lines and departments for making assorted products
from banana fibre, waste clothes and buveera*



Solid Waste management in Schools

- 04 schools enrolled
- 2727 pupils benefited

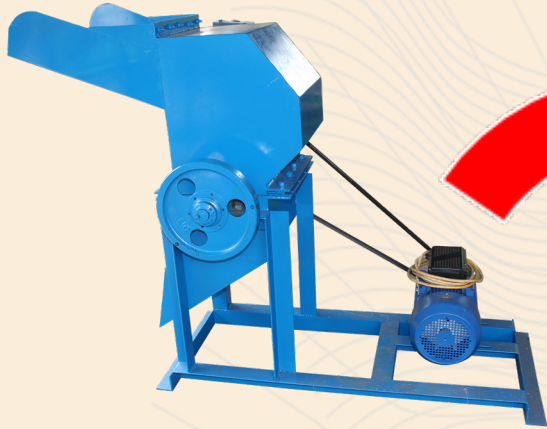


Exposure Learning & internship

- 03 institutions benefited
- 217 students hosted
- 05 interns hosted

TECHNOLOGY DEVELOPMENT

This financial year, three machines were fabricated by the ATC. The machines are used in the process of managing plastic waste with the view to promote circular economy paradigm. Machines fabricated are complementary to each other and these include;



Plastic Shredder



Plastic Extruder



Hydraulic Press



The Plastic Shredder

The shredder is used to cut plastics into relatively smaller pieces to reduce bulkiness and for easy melting. The electric shredder is manually fed with plastic and has capacity to shred approximately 70kgs of High-density polyethylene (HDPE) plastics, 70kgs of Low-density polyethylene (LDPE) and 36 kgs of Polyethylene terephthalate (PET) per hour.

Plastic Extruder

The extruder aids the second phase of plastic waste processing. The shredded plastics are melted using an electric powered extruder. The extruder has capacity to extrude 30 Kgs of HDPE, 28Kgs of LDPE and 20Kgs of PET all mixed with sand per hour.

Hydraulic press

The hydraulic press aids the third/final phase of plastic processing. The melted plastic and sand mixture is fed into the hydraulic press to produce final products. Using the three machines we make pavers and bricks used for construction purposes. The products have been used to construct demo structures at the Centre.

Facts about plastic waste menace

Unwanted plastics account for over 30% of solid waste produced in Uganda. There are no structured ways of managing such waste and thus, most of it ends up disposed in the environment. Even in cases where less than 10% is collected and reused, it mainly goes back in circulation and end up in the environment. The general population lacks knowledge and skills

gap on how to permanently repurpose plastics. ATC show cases relatively smart options of repurposing plastic waste by using it as composite for construction. This alternative use as well promotes extraction of plastics from the environment, relieves pressure on natural resources, and creates employment opportunities mainly for plastic waste collectors.

TECHNOLOGY PROFILING



Portable Erosion Chlorinator

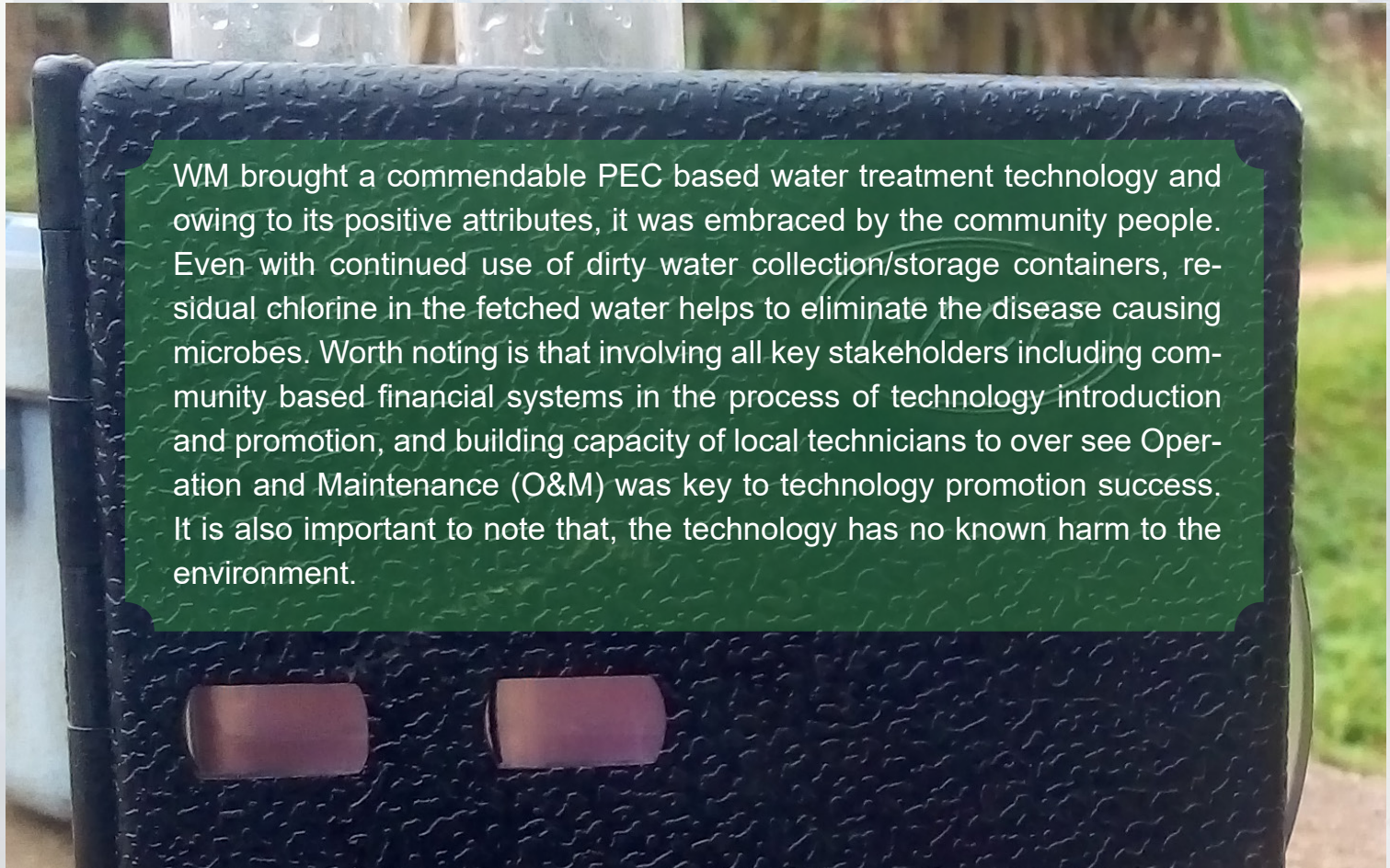
Technology Applicability Framework (TAF) tool was used to assess the appropriateness of the Portable Erosion Chlorinator (PEC) promoted by Water Mission (WM) Uganda. The exercise was conducted on 12 piped mini water supply systems installed with PEC in Luuka district. Results of assessment positioned PEC as a worth technology for strengthening safe water chain. Community people appreciated the technology and shared good stories.

The technology helped to reduce hygiene related challenges they experience prior. Among the challenges pointed out was high prevalence of diarrhoeal diseases, typhoid and regular stomach upsets which they attributed to impurities that used to be

in the water they were using. They attributed such impurities in drinking water to poor hygiene and sanitation at household, community and environmental level.

They indicated that much as hygiene and sanitation standards have not improved as such i.e., people still fetch/store water in dirty jerrycans, some litter faeces for both human and animals; the frequency of preventable faecal oral diseases reduced as they adopted using treated water. The positive change was attribute to WM's intervention.

Amidst the fact that boiling water is costly for the very poor Ugandans, many people in the project area used to drink un treated water and this increased their risk of sanitation related illness.

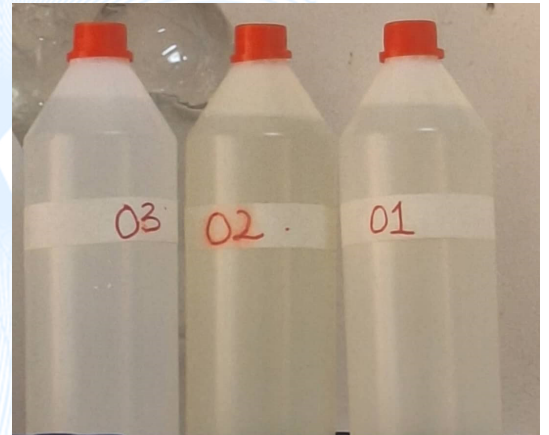


WM brought a commendable PEC based water treatment technology and owing to its positive attributes, it was embraced by the community people. Even with continued use of dirty water collection/storage containers, residual chlorine in the fetched water helps to eliminate the disease causing microbes. Worth noting is that involving all key stakeholders including community based financial systems in the process of technology introduction and promotion, and building capacity of local technicians to over see Operation and Maintenance (O&M) was key to technology promotion success. It is also important to note that, the technology has no known harm to the environment.



SV36 Water Purification Solution

SV36 is a liquid solution positioned as a water disinfection technology good for point of use and is promoted by Mr. David Mills from the USA. Profiling of this technology is still going on as the promoter is making the necessary adjustments and precautions to enhance technology efficacy. As such, the technology is pending satisfactory water quality result from the laboratory before it is taken to communities for trials.





Addressing the issue of corrosive iron to improve functionality of point water sources

Water Aid (WA) Uganda is implementing the borehole (BH) upgrade project in Masindi and Kabalore districts with the aim of addressing the challenge of corrosive iron that was observed in prior borehole functionality study. The pilot has a target of 100 boreholes i.e., 80 in Masindi and 20 in Kabalore district. As part of the project, poorly performing or broken-down boreholes are identified and repaired. The repairs involve replacing corroded steel pipes with uPVC poldaw pipes.

In the target places, boreholes were the major source of safe water supply and in cases where such boreholes were not functional prior to WA's BH upgrade project, communities were using unsafe open surface water sources.

The project is implemented in partnership with the District Local Government (DLG) through the district water office and hand pump mechanics association. The project also brings on-board leaders at community level including Local Council (LC) and the water user committees.



The use of uPVC poldaw pipes in borehole for BH installation is relatively new in Uganda thus the need for technology profiling.

The ATC took part in project monitoring and through the exercise we carried out technology screening which is a pre-phase in preparation for subjecting the uPVC poldaw pipes technology to TAF assessment.

During the exercise, it was observed that many deep boreholes had been

turned into shallow wells and this compromised their water yields. Every time a borehole would breakdown, some pipes were removed in the process of repair.

In Masindi, Kyangamwoyo borehole had been reduced from twelve (12) to three pipes (03) and users reported that the borehole would nearly dry up during the dry season yet it would yield fairly adequate water during the wet season. This particular borehole and many others were reinstalled to 12 pipes under the WA BH upgrade project.



Short term results positioned the interventions as promising but monitoring is still on-going to observe long-term performance and also TAF assessment will be carried out to inform technology scale up.

Technology Transfer



To address outcry for technological solutions to challenges faced by the country and in effort to accelerate growth and development, several innovations have been developed by various stakeholders including government, NGOs, individual artisans, academia and private sector. However, many of these technologies

are stuck at pilot level despite their potential to alleviate the targeted challenges. As such the country is yet to benefit from such novel innovations. Among the reason for failure to transfer and scale up technologies in the country is lack of resources and gaps in supply chain management.



The ATC intervened to enhance technology transfer by creating an intentional drive using pro-poor funding models to take smart technologies from laboratories to communities where they are needed most. The drive involves blended approach including triggering demand, skilling grassroots technicians, providing technical support, mentorship, subsidies and periodic follow up.



Black Soldier Fly Larvae (BSFL) and Earth worms for Agricultural enhancement

Both BSFL and earth worms are used to aid production of compost and supplement animal nutrition. Bio-degradable waste is used as insect and earthworm feeds and in the process, feed stock is raised as well as compost for boosting farm produce. Efforts to harness this technology are still scanty as in-country endeavours are centred on safely containment of human faecal waste to minimize the related harm to humans. Less attention is accorded to using locally available options like composting of agricultural waste to boost sustainable smart agriculture yet in the country's Nationally Determined Contributions (NDC) report for 2022 agriculture as the

second largest contributor to Green House gases (GHG) emissions with a total contribution of 26.9%. The BSFL and earth worm technology come in handy because they can be used to minimize agro-induced greenhouse gases by reducing carbon emission and lowering carbon footprint.

ATC is bridging the technology, knowledge and skills gap by promoting use of BSFL and earth worms to safely manage both human and animal excreta as well as other agricultural waste but also promote animal production as well as organic farming using compost and crop-based pesticides.



In the financial year 2023/2024, the two innovations i.e., BSFL and earth worms were introduced to 09 (nine) communities in Mukono i.e., Nsuube village in Nabuti sub-county, Bugoye and Nakibanga villages in Ntenjeru Town Council, Katoogo village Nama subcounty, Kiyunga village in Kyampisi sub-county, Kalagi and Nakaseta in Namataba Town Council, Bugujju and Kauga in Mukono Municipality. In total, 246 community people were trained on BSFL farming and use as a composting agent as well as poultry feeds. 57% of the beneficiaries were females. Compared to earthworms the BSFL attracted many adopters partly, because of their shorter life cycle i.e., 21 days and they easily multiply to provide quick feeds to poultry and piggery in a shorter period of time.

The Blue Flame Biogas

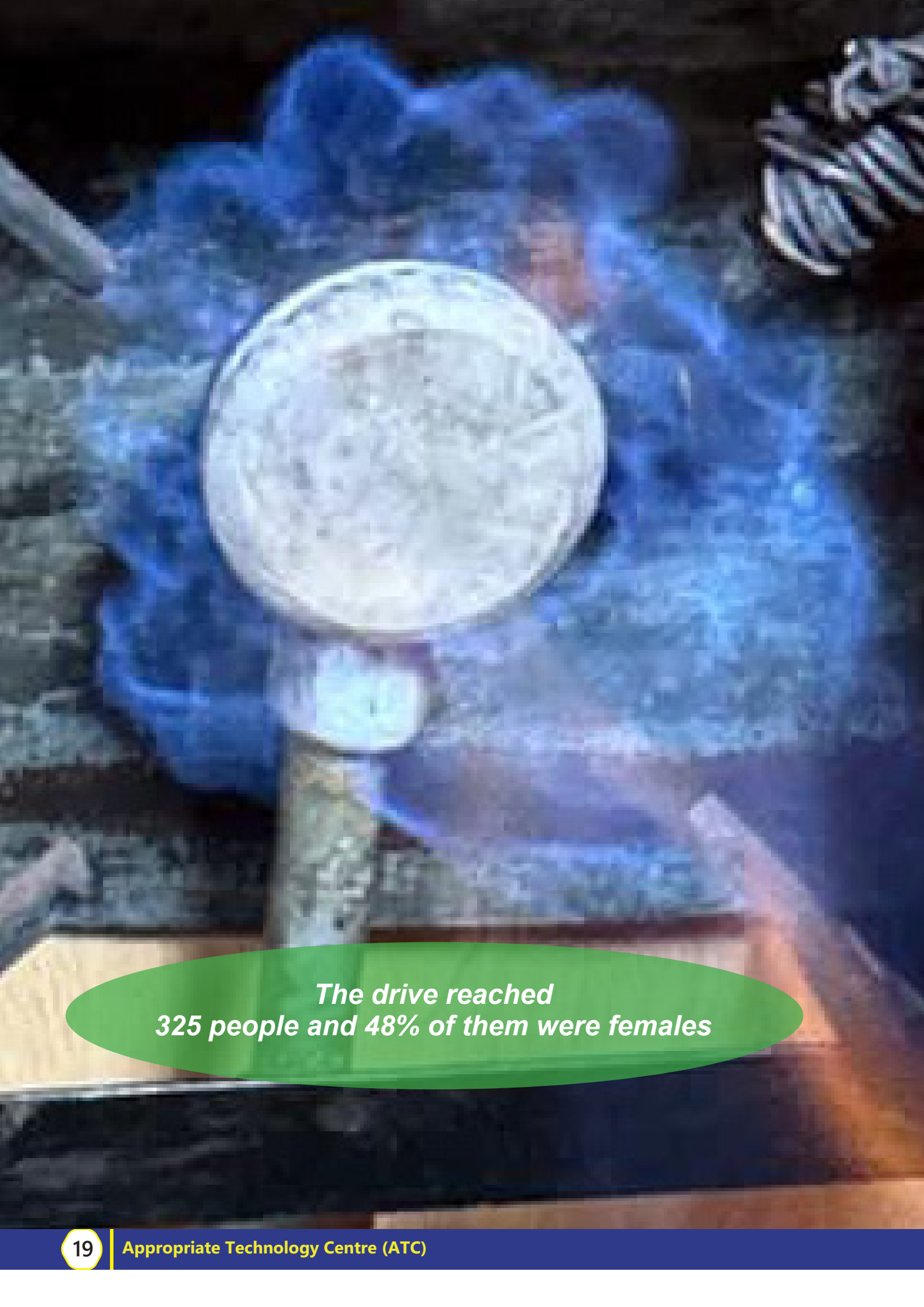
The ATC is promoting the energy upgrade efforts at community level. ATC efforts are spurred by the energy crisis in the country. For example, energy is third placed among the greatest contributors of GHG, with a total contribution of 10.7% according to the country's NDC report (2022).

The 2021 National Household Survey report indicated that 94% of Ugandans still use wood fuel for cooking i.e., 73% use firewood and 21% use charcoal. This presents a big threat to the country's forest resources. To be precise, more than 1.03Mha (13%) forest cover has been lost since 2001 according to the national forest watch. Closely related, only 43% Ugandans use improved energy sources i.e., electricity and solar basically for lighting. The rest use light options with a lot of health-related risks and environmental consequences. To address the energy question and contribute to the just transition cam-

paign calls for popularization of appropriate technologies that will foster a relief on the country's natural resources.

The blue flame biogas from a combination of human waste, animal waste and other bio-degradable solid waste is a suitable and relatively affordable self-supply energy alternative for decarbonizing the economy since it helps to effectively manage methane gas from solid waste.

Based on this background, ATC embarked on community promotion of biogas. In the financial year FY2023/2024, biogas was promoted in seven villages in Mukono district i.e., Maziba and Mpumu villages in Ntenjeru Town Council, Nama village in Nama sub-county, Kanyogoga village in Namataba Town Council, Namasinda in Nagojje sub-county, Wantoni and Kauga village in Mukono municipality.



*The drive reached
325 people and 48% of them were females*

Storm water harvesting using the low-cost pond

To further boost agriculture production, ATC promoted the low-cost storm water harvesting pond technology. The intervention aimed at providing a low-cost technological option in a situation where water for production has increasingly become

scarce as rains continuously become intermittent and unreliable in the era of climate change. In the gone financial year, the ATC reached out to communities, teaching and skilling people/ small scale farmers to harvest storm water and use it to supplement crop water requirements.



Twenty-three (23) communities in Mukono district benefited from this project i.e., Kanyogoga, Kaazi and Wabuyamba villages in Namataba Town Council, Kitto, Nanfumba, Namasinda, Wabulongo, Kyetume II, Mangiira, Kasana villages in Nagojje sub-county, Kakoola and Katoogo villages in Nama sub-county, Banga, Mirembe,

Lweteega, Kabira and Bunyama, Bugoye, Bunankanda, Luga, Terere, Mpologoma and Mpumu villages in Ntenjeru Town Council. In total 254 farmers were taught about the technology and 36% of them were females. In the process, 32 community people were equipped with hands-on construction skills and 12 ponds were constructed as demos.

Empowering pupils to champion in Solid waste Management

Addressing the problem of solid waste is key among the sustainability pillars. However, little efforts are being done in Uganda. The ATC designed and is implementing school packages that impart pupils with technological knowledge and skills in the area of water, sanitation, hygiene and environment (WaSHE). The developed packages are aimed at popularization of circular economy paradigm for sustainable resource utilization. The packages involve teaching children about real society challenges of poor solid waste management and skilling them to transform perceptions to become proactive agents of change. Pupils are guided to sort polythene bags from general solid waste (both at home and school), clean them and make useful products that could be used relatively longer or permanently. **As a matter of emphasis, Solid waste with 2.3% is forth placed among the largest contributors to GHG in the country.**



The bold step taken by ATC to empower the young generation with effective solid waste management knowledge and skills is anticipated to contribute towards a lasting solution to the long-standing challenge of environmental pollution due to poor solid waste management.

Apparently solid waste is disposed without sorting and this increases the risk of disaster across the country.

Taking improvement campaigns in schools creates a strong foundation to safe guard the environment for the future generation. Schools that have so far benefited from the project include; Mukono Bishop East primary school, Nasejjobe UMEA primary school, Kyabakadde Roman Catholic Church primary school and Nakifuma Church of Uganda primary school all in Mukono district. In total 2727 pupils benefited.





Applied Research and Pilot Studies

Briquetting and Market Survey

For entire financial year FY2023/2024 30,376kgs of briquettes with an average of 2500kgs per month were produced at the Centre and these were used in the market survey that was carried out in Mukono, Wakiso, Jinja and Kayunga districts. The briquettes were promoted as part of the market survey in effort to popularize the technology. 746 people got a chance to use and over 85% have continued using the briquettes.

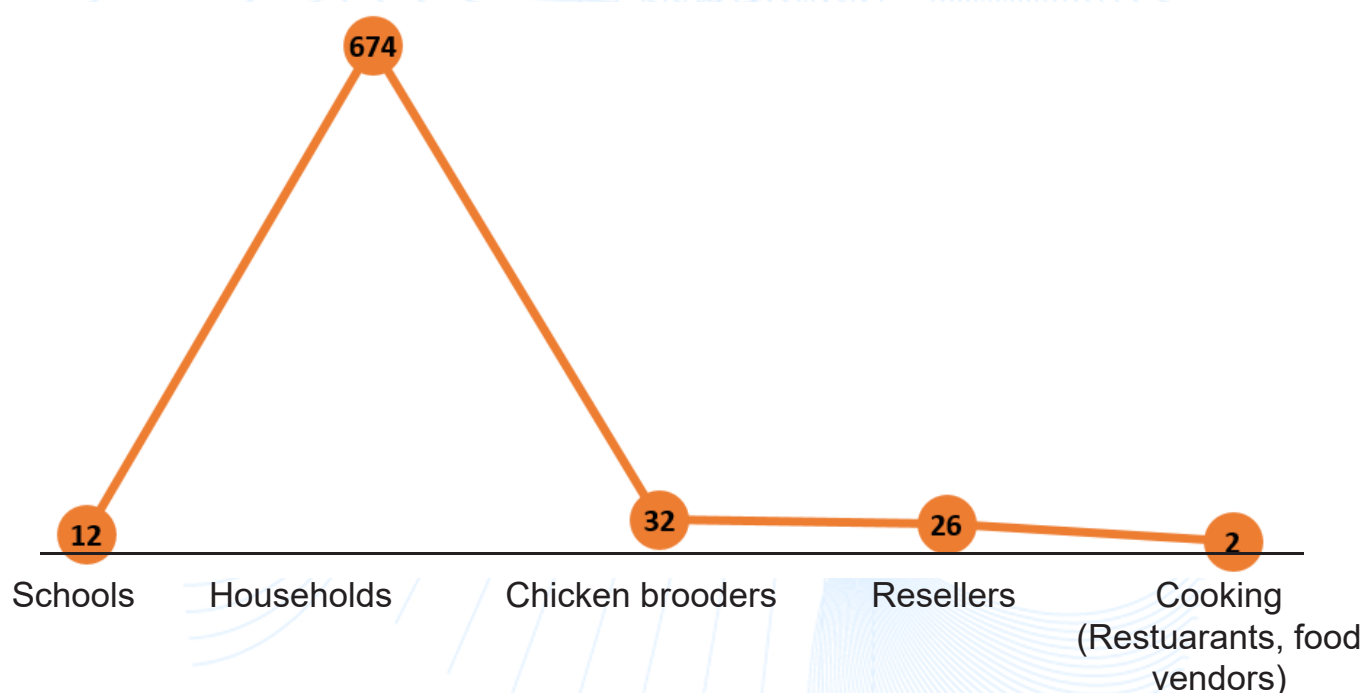
The project involved establishing reseller points/contacts, taking products at the doorsteps of targeted end users, teaching them how to use the products and also collect user feedback. Promotions were carried out in Muko-

no, Wakiso, Jinja and Kayunga districts, targeting households, restaurants, resellers, poultry farming and schools.

Feed back from the field showed prior lack of knowledge and later appreciation of the briquettes following sensitization and demonstration by the ATC team.

Among the strength, ATC briquettes were appreciated for being smokeless, low cost and energy saving cooking alternative. The community people commended ATC effort to clean up the environment and provide an alternative that would if widely adopted reduce deforestation in search for cooking fuel.

User of ATC Eco briquettes in the FY2023/2024



Villages covered in Mukono

Namumira, Kaama, Lwanyonyi, Kikubankima, Nasuuti, Jes Jonny, Kikooza, Kasawo, Nsuube, Nakisunga, Kussattu, Kisowera, Kasangalabi, Katosi road, Saza, Seeta, Ntaawo, Nkokonjeru, Kiyola, Kayunga-road, Kyetume, Wantoni, Mukono Municipality, Kauga, Kisoga, Nsanja, Kiwala, Katosi, Lweza- Mukono, Lugazi, Namuyenje, Kitete, Kulerwe, Nagojje, Kasana, Namasinda, Mpatta and Kalagi.

Villages covered in Wakiso

Akright, Entebbe, Nansana, Wakiso TC, Gayaza, Kira, Gayaza, Namusera. Villages covered in Kampala: Kawempe, Kiwatule, Naguru, Kireka, Mutungo, Luzira, Kyambogo.

Villages covered in Kayunga

Kayunga TC. In Jinja the products were promoted in Jinja Municipality.



Piloting Bio-enzyme use for Management of pit latrines

ATC initiated a project on using bio-enzyme to improve functionality of institutional pit latrines. The project is running in 20 institutions i.e., 13 schools, 02 healthcare facilities, 01 administration block, 01 police station and 03 places of worship. These institutions are located in Kayunga and Mukono respectively. Organic waste-based bio-enzymes is used in the pilot study with the aim of evaluating its potential for improving functionality of pit latrines.

The solution is believed to improve functionality of pit latrines by eliminating

odour, maggots and flies and extend the latrine lifespan by controlling sludge build up.

The project started with a baseline that showed pathetic performance of pit latrines in the selected institutions. for example, only 35% of the institutions had a stance-user ratio below 40. In some institutions the stance to user-ratio was as high as 1:107. Over 65% of the selected pit latrines have relatively higher user ratios, a key factor that could have contributed to rapid filling up of the latrines.

ATC BIO ENZYME

FUNCTIONS

- ▶ Used as a liquid fertilizer for plants
- ▶ Used as a pesticide to control pests in plants
- ▶ Used as a cleaning detergent
- ▶ Used for eliminating maggots, bad odour and flies in pit latrines

Rich in Ethanol, vinegar/alcohol and organic compounds

APPLICATION

Must be mixed with water before use;

- ▶ **For latrines:** A ratio of 1:3 is recommended. In case the latrine is in a very bad state, dry application is recommended.
- ▶ **Garden pesticide:** A ratio of 1:10 is recommended. Spray on leaves
- ▶ **Liquid fertilizer:** A ratio of 1:5 is recommended. Spray on roots

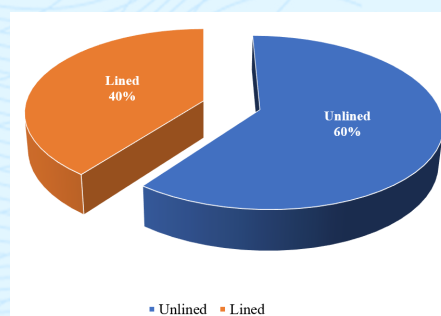


Among other challenges observed during the baseline were; 93% of the latrines assessed had unhealthy flies such as houseflies, blue bottle flies and fungus gnats a species of flies that are associated to spread of conjunctivitis and human urinary myiasis. 95% had maggots that were even visible around the surface area and 91% presented with very bad odour. All these challenges made proper latrine use hard for the target users and in some case scenarios users would prefer to practice open defecation than daring the sole state latrines.

Upon that background and in effort to pro-

vide a low cost technological solution to the pit latrine challenges, ATC produced and piloted use of bio-enzyme solution, a product locally made from fruit waste. For the selected sites, the bioenzyme solution is applied in pit latrines on a weekly basis under close supervision and latrine performance is monitored.

Types of Pit Latrines Studied (n=43)



Preliminary results:

preliminary results as of week 8 of project implementation, showed promising results especially in relation to eliminating presence of odour, maggots and flies.

Weekly dosing of pit latrine with bio-enzyme helped to improve the hygiene of these institutional latrines. On the issue of pit depth improvement, so far the study gives mixed results though with more positive progress in unlined pits latrines having proper operation and maintenance.

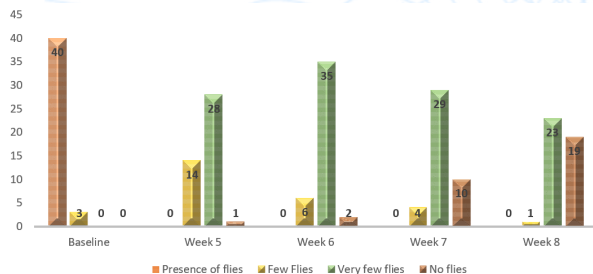
Even in some lined latrines there are fairly promising results especially for those ones that adhere to proper operation and maintenance i.e., not throwing non-biode-

gradable solid waste inside the latrines. However, the project is too early to draw conclusions. Weekly bio-enzyme application and monitoring are still going on.

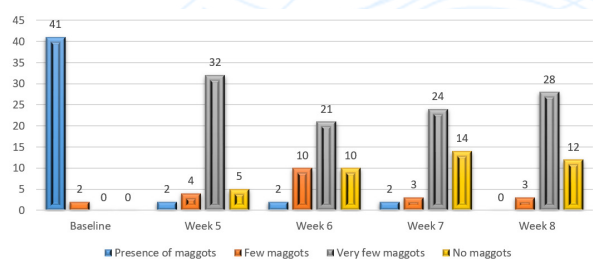
The project will go on for at least 12 months and a report of technology efficacy will be shared to inform possible scale up since more than 90% of institutions using pit latrines in the country are likely to have closely related challenges.

The results will also inform uptake of the technology at household level keeping in mind that 83% of households in Uganda use traditional pit latrines according to the 2021 National Survey report.

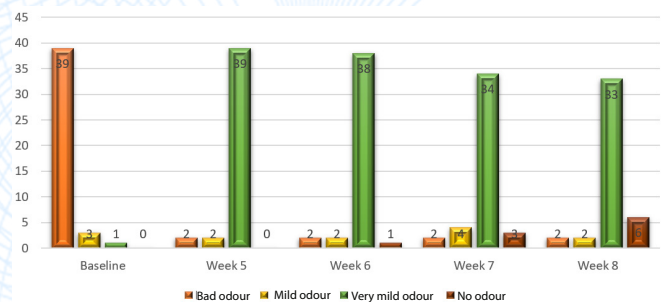
Weekly observation of flies in pit latrines (n=43)



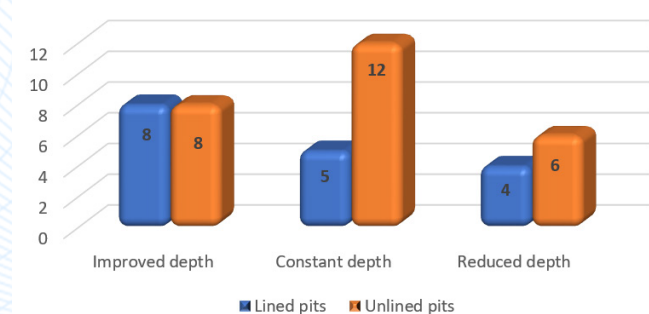
Weekly observation of maggots in pit latrines (n=43)



Weekly observation of odour in pit latrines (n=43)



Pit depth performance by the 8th week of monitoring (n=43)



For pit latrines with poor performance, it was observed that users throw non-biodegradable materials including plastic pottles into the latrine. to minimize the possible confounding effect of such practices, affected institutions were advised to empty and reduce the NBM load before the project proceeds. in addition latrine users were sensitized on the dos and donts.



Technology Demonstration

To minimize scepticism by the potential technology adopters, it is necessary to create a reference base for easy reference and benchmarking of the technologies promoted in communities. With this in mind, in the process of profiling the Centre demonstrates different technologies on site. For the financial year 2023/2024, in addition to maintaining the already existing demos, more demos showcasing solid waste recycling and repurposing were installed at the Centre.



Plastic waste repurposing

The Centre continued to showcase techniques for repurposing of plastic waste. Under this project, demo superstructures have been constructed on-site using waste driplines, plastic composite and unmelted plastic bottle bricks. We also continued making different products from buveera i.e., bags, mattress covers, rain jackets, ear rings and cushions among others.

Banana Pseudo Stem Value Addition

Fibre Extraction and Weaving



In Uganda, more than 75% of farmers grow bananas with the central focus of interest being the fruit. Upon harvesting, the pseudo stem is largely treated as waste. The pseudo stem account for 75% of the banana plant waste. It should be noted that the pseudo stem takes more than four months to decompose because it is rich in cellulose component. In the process of natural decomposition there is increased risk of GHG emissions i.e., methane (CH₄) and nitrous oxide (N₂O). In addition, plant diseases spread by long distances of infected banana wastes. In effort to promote circularity and minimize GHG emissions, the ATC is promoting pseudo stem repurposing/ safe management. The Centre show case different technologies for repurposing of banana pseudo stem and also raises the profile for the part that comprises 60% the banana plant's mass. At the Centre, fibre extracted is used to make sanitary pads, carpets, door mats, ornaments and other decorative products. The residue is used to make briquettes and the liquid waste is used to make pesticides.

EXPOSURE LEARNING & INTERNSHIP



The Centre received groups of students from tertiary institutions who came to learn about low-cost technological options that can be replicated in communities. The students were from College of Health Science, Makerere University and Uganda Institute of Allied Health and Management Sciences-Mulago. In addition, we received students for internship

from Makerere University, Uganda Christian University and students in their senior six vacation who used the opportunity to acquire hands-on skills.



FINANCIAL PERFORMANCE

RECEIPTS FROM MINISTRY OF WATER AND ENVIRONMENT

Date	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total (UGX)
22/9/2023	55,797,517				55,797,517
28/12/2024		1350,000,000			1,350,000,000
15/4/2024			220,000,000		220,000,000
21/6/2024				100,000,000	100,000,000
					1,725,797,517

ATC INCOME FOR THE PERIOD JULY 2023 - JUNE 2024

SN.	INCOME SOURCE	AMOUNT	% AGE
1.	GOU/MWE	1,725,797,517	97.6
2.	Technology Promotion	36,451,200	2.1
3.	Water Mission Uganda	5,867,000	0.3
	TOTAL	1,768,115,717	100

ATC EXPENDITURE FOR THE PERIOD JULY 2023 - JUNE 2024

SN.	COST CATEGORY	EXPENDITURE	%AGE
1.	Appropriate Technologies Expo	1,690,000	0.1
2.	Human Resource Management	349,144,616	20.2
3.	Research, Technology development, Profiling & Promotion	606,946,080	35.2
4.	Oversight Management & Partnership	484,435,000	28.07
5.	Office Running & Administration	63,889,767	3.7
6.	Vehicle Running Expenses	10,372,736	0.6
7.	Institutional Branding & Profiling	63,298,100	3.7
8.	Taxes & NSSF	136,937,929	7.9
9.	Security	8,500,000	0.5
10.	Surplus	583,289	0.03
	TOTAL	1,725,797,517	100



Ministry of Water and Environment

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