Green Advocacy Ghana
GreenAd

www.greenadghana.com

2021 & 2022
ANNUAL REPORT

No. 06 Osiabour Plaza, Sakumono Estates
Junction, Nungua-Lashibi Road, Box SK 482,
Sakumono Estates, Tema. Ghana.

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LIST OF ACRONYMS

AEHPMP	Africa Environmental Health and Pollution Management Programme
ASGM	Artisanal and Small-Scale Gold Mining
CEHRT	Centre for Environment and Health Research and Training
CRI	Crop Research Institute
CRTs	Cathode Ray Tubes
CSIR	Council for Scientific and Industrial Research
CSO	Civil Society Organization
EEE	Electronic and Electrical Equipment
EPA	Environmental Protection Agency
E-WASTE	Electrical & Electronic Waste
FDA	Food and Drugs Authority
GASDA	Greater Accra Scrap Dealers Association
GEF	Global Environment Facility
GHS	Ghana Cedis
GIZ	German Agency for International Cooperation
GreenAd	Ghana Advocacy Ghana
Hg	Mercury
HOC	Handing Over Centre
ICT	Information and Communication Technology
IIR	Industrial Research Institute
KfW	German Development Bank
lbs	Pounds
MeHg	Methylmercury
MESTI	Ministry of Environment, Science, Technology and Innovation
NGO	Non-Governmental Organization
PM	Particulate Matter
SDGs	Sustainable Development Goals
SSM	Small-Scale Mining
UK	United Kingdom
UKRI	UK Research and Innovation
WASH	Water, Sanitation and Hygiene
WEEE	Waste Electrical and Electronic Equipment
WP	Work Package
WRI	Water Research Institute

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MESSAGE FROM EXECUTIVE DIRECTOR

Dear Friends,

The year 2021 unarguably was challenging. The world continued to reel from the impact of the COVID-19 pandemic and the ever-present climate crisis. We neither had any relief in 2022. Sky rocking operational costs and distortion of planned budgets outside our control, for instance, from the financial sector turbulence linked to the war in Ukraine, among others compounded the challenges in 2022. It was even more taxing for organisations like ours who strove to deliver our crucial interventions for the benefit of society and improvement of the environment.

Our work for the crucial two years for our beneficiaries cut across all four of our thematic areas: Waste Management (Including the E-waste Sector), Water & Sanitation, Pollution Control & Awareness Creation and Environmental Education & Publication. The decision to combine Years 2021 and 2022 reporting was informed by the similar nature of the projects, duration of implementation (spanning 2021 and 2022) and to avoid fragmented or rather repeated reporting. We worked with eight organisations (both national and international) on four project areas to deliver remarkable results. These included:

1) Providing safe and improved water and toilet facilities for the Gbegbeyise coastal community (Dansoman, Accra) as well as sensitizing them on the benefits of environmental and personal hygiene practices;

2) Educating students of the Umar Bun Hatab Islamic School in Madina Zongo on proper waste management practices, including waste-to-energy by installing a demonstrator biodigester in the school;

3) Continuing operation at the buy-back centre (Agbogbloshie) for defined electronic-waste streams to eliminate the use of crude and harmful metal recovery methods among informal E-scrap workers; and

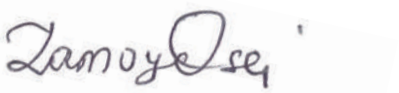
4) Educating Artisanal and Small-Scale Gold Miners on the toxic effects of the use of mercury.

In addition to these projects, we began documenting our decade of pioneering work and management experience in the e-waste sector in the country. Our hope is to share the valuable lessons learnt in the past, from the several studies and projects initiated in tackling the e-waste menace, as well as to establish GreenAd as a repository of e-waste sector knowledge and publications for the benefit of other CSOs/NGOs, governmental and academic institutions, and students.

Another pressing environmental and health lapse and concern is the improper disposal of pharmaceutical, cosmetic and hospital wastes and the associated potential risks, including anti-microbial resistance. GreenAd has already initiated a process to collaborate and address this frightening waste stream with AH Pharma Ltd, the EPA, Food and Drugs Authority, the Pharmacy Council, etc.

Partnership has always been the name of the game for our work at GreenAd. No doubt, the gains we made in the interest of the environment and health of society, conscious of contributing to the SDGs and climate change mitigation were all with the support, and sponsorship of our committed partners. Let me mention particularly: Ministry of Environment, Science, Technology and Innovation, KfW Development Bank, Lancaster University, EPA, CSIR, Hatof Foundation, Blue Skies, Umar Bun Hatab Islamic School and the communities of Gbegbeyise and Madina Zongo as well as our sister company Centre for Environment and Health Research and Training.

I am proud of the partnerships and our accomplishments and look forward to more promising and exciting years ahead.



Yaw Amoyaw-Osei
Executive Director

ABOUT GREENAD

Green Advocacy Ghana (GreenAd) is an organisation that aims to promote and enhance the sustainability of Ghana's environment through:

- **Partnership in environmental and health research, and Publications, including the development of databases;**
- **Training/capacity building and dissemination of environmental information;**
- **Stakeholder and community engagement and mobilization for sanitation campaigns;**
- **Promotion of environmental consciousness and functional environmental understanding through the newsletter publication &**
- **Application of environmental knowledge to engender sustainable lifestyles and communities.**

Our Thematic Areas

- Waste Management (Including the E-waste Sector)
- Water & Sanitation
- Pollution Control & Awareness Creation
- Environmental Education & Publication

Our Challenge

We observe the following environmental challenges which plague us all:

- Frightening apathy and neglect of the environment;
- Striking dearth of consciousness and ethics of the population, and imminent risk to health and well being; &
- An adult population seemingly and helplessly lost on the "environment'

Our Charge to Keep

We cannot look on while the environmental security of future generations is mortgaged;

- We cannot help but work on the environmental ignorance of our people;
- We must challenge the unnecessary environmentally inflicted health and related burden on the people;
- We oppose the unsustainable economic gains that neglect the environmental dimension; and
- We desire to win the younger generation for the good course of the environment.

Our Strategy and Motivation

GreenAd's foremost strategy is targeted at the youth of Ghana, which is to:

- Develop and apply functional environmental knowledge and literacy tools;
- Create environmental consciousness, awareness and alertness;
- Engender environmental interest in the poulation;
- Create avenues and opportunities for positive environmental action; and
- Give environmental leadership and exemplary action.

OUR PROJECTS

The year under review focused on the following project sectors: water and sanitation, waste management, pollution control, and environmental health education. Other areas included preparation for publication of a ***Decade-long E-waste pioneering work in Ghana and Proposal for Pharmaceutical, Cosmetic and Hospital Waste Management.*** A brief outline of the projects and activities for for 2021 and 2022 are below.

Our Objective

Nurture positive environmental attitudes in children and youth, challenging the adult population to shed off apathy to the environment and influencing actions, decisions, etc. of institutions and others to thread sustainable paths

Our Mission

Be a mouthpiece for the environment in the pursuit of environmental integrity, sustainable actions and quality lifestyle, for the Ghanaian today and for posterity.

Thematic Area 1: Waste Management (Including the E-waste Sector)

PROJECT

Ministry of Environment, Science, Technology & Innovation (MESTI)/ KfW Incentive Payment System

SUMMARY

The GreenAd operated pilot incentive payment system covers four e-waste types (Batteries, Cables, Cathode Ray Tubes and Thermoplastics) at the Handing Over Centre (HOC) at Agbogbloshie. The e-waste types are purchased from scrap dealers at agreed pre-determined market prices by weight as an incentive against the crude and environmentally unacceptable method of treatment for recovery of metals from these wastes.

The project is under the auspices of and managed by MESTI, with funding from KfW

PROJECT

Pharmaceutical, Cosmetic and Hospital Waste Management Proposal

SUMMARY

The increasing generation of pharmaceutical and cosmetic as well as hospital wastes across the country without any safe disposal - often dumped in unlined dumpsites, crushed, and buried, or by other less desirable disposal methods, pose imminent threat to the environment and human health. A major related

threat is anti-microbial resistance.

This is another neglected waste management area that GreenAd's initiated action to find environmentally sound and safe method of disposal and management is being explored.

PROJECT

Publication on Decade of E-waste Pioneering Work in Ghana

SUMMARY

GreenAd has been at the forefront of pioneering work in the safe management of e-waste and publication of e-waste studies in the country, since 2009. The E-waste Decade publication documents the journey and contributions made in the sector, serving both as a historical account and knowledge repository for the benefit of other Civil Society Organizations (CSOs) or Non-Governmental Organizations (NGOs) working in the sector. It will also be a resource material pointing to other related publications for governmental and academic institutions and students.

Thematic Area 2: Water & Sanitation

PROJECT

Driving Eco-Innovation in Africa: Capacity Building for a Safe Circular Water Economy (RECIRCULATE)

SUMMARY

Funded by UK Research and Innovation (UKRI), this action-oriented research project, made up of 5 work packages, aimed at driving eco-innovation through building capacity for a safe circular water economy. GreenAd implemented work package 2 (Health and Sanitation) together with the Lancaster University UK, the Council for Scientific and Industrial Research (CSIR) and Blue Skies.

The project was implemented in the Gbegbeyise community near Dansoman in Accra.

Thematic Area 3: Pollution Control & Awareness Creation

PROJECT

Accelerating the Adoption of Circular Sanitation Demonstration Systems for Improved Health Outcomes (ACTUATE)

SUMMARY

The ACTUATE project aimed at encouraging the adoption of the anaerobic digester technology and circular economy by showcasing the benefits through co-delivery of community-based demonstration sys-

tems in Ghana (which also included Nigeria). It was implemented in the Madina Zongo community and specifically at the Umar Bun Hatab Islamic School, where the anaerobic digester was built. The project involved the school pupils and their teachers actively and to whom the success of the whole ACTUATE project is credited.

Thematic Area 4: Environmental Education & Publication

PROJECT

Outreach and Communication Strategy for Mercury Management in Artisanal and Small -Scale Mining in Ghana

SUMMARY

Ghana is one of five African countries participating in the Global Environmental Facility (GEF) funded African Environmental Health and Pollution Management Programme (AEHPMP), with the objective to reduce exposure to mercury and regulate mercury used in artisanal small-scale gold mining (ASGM). The outreach/communication strategy on the environmental health risks of mercury management was developed to help change mindsets and move mercury users in the ASGM sector towards cleaner practices and technologies. GreenAd won the contract and successfully delivered the Outreach and Communication Strategy to EPA and the World Bank.

Section 1

Recycling / Disposal of E-waste - MESTI/KFW Incentive Payment System

FACT CORNER

Duration
2019
2022

Consultancy
¢ 715,862
(2021 - 2022)

Incentives
¢ 976,000
(2021 - 2022)

Partnership


implemented by
KFW
PROJECT:
RECYCLING AND DISPOSAL OF WASTE OF ELECTRICAL AND ELECTRONIC EQUIPMENT IN AN ENVIRONMENTALLY SOUND WAY, PHASE 1
STOP
STOP DUMPING
MIXED BATTERIES ARE DANGEROUS TO OUR ENVIRONMENT
BRING THEM FOR MONEY!
FOR MORE INFORMATION CALL:
0244923893
Location: The Project Site,
Agbogloshie Scap Yard, Accra
RAMBOLL

OVERVIEW

The Ministry of Environment, Science, Technology and Innovation (MESTI) in partnership with the German Development Bank (KfW) is implementing a bilateral development project – Recycling and Disposal of Waste Electrical and Electronic Equipment (WEEE) in an Environmentally Sound Manner – between the Republic of Ghana and the Federal Republic of Germany. This initiative is contributing towards the development of a sustainable WEEE (i.e., e-waste) management system that reduces environmental and social hazards associated with the mismanagement of e-waste and improves economic livelihoods of the people involved in the e-waste value chain.

An incentive payment system covering four e-waste types (Batteries, Cables, CRTs and Thermoplastics) is being implemented at a pilot facility operated by GreenAd, at Agbogbloshie. The facility - Handing Over Centre (HOC) - serves as the receive centre for the e-waste types by purchasing them from scrap dealers at a pre-determined market price by weight. The purchased e-waste is temporarily stored at the HOC and transported to the MESTI/KfW warehouse near the Ghana Atomic Energy Commission to be auctioned to registered formal recycling companies. The incentive system at the HOC was established with support from the Environmental Protection Agency (EPA), GOPAInfra, RAMBOLL and the Mountain Research Institute.

OBJECTIVES

- Establish implementation structure, financial management and provisional manual of procedures;
- Establish the Handing Over Centre (HOC), market surveys, elaboration and test of procedures for the core activities (purchasing of e-waste, tenders/auctions etc.); and
- Full execution of core activities, revision and extension of list of eligible e-waste.

AIM

To reduce damage to environmental and human health caused by the unsound recycling of e-waste while assuring livelihoods.

The HOC addresses the critical problem in the current e-waste management system of informal e-waste workers' interest in fractions and materials with a positive net-value (copper, ferrous metals, aluminium and printed circuit boards), while other components (such as plastics and lead-glass) are improperly discarded, burned directly or used as combustion agents. This leads to externalisation of costs (e.g., extreme pollution not accounted for), and a situation where environmentally sound recyclers (i.e., those who do not externalise costs) have difficulty competing with informal collectors and recyclers. The incentive payment system was based on the hypothesis that if informal recyclers have more economically attractive options, complemented by training and awareness efforts, for their collected e-waste (e.g., selling it to take-back locations for an attractive price), they would sooner or later use this option rather than conducting their own sub-standard and polluting recycling.

A supportive, transparent documentation system for all incoming e-waste volumes and incentive payments guarantees credibility of the business using data management software. The software captures data which is synchronized to an online platform giving access to partners on real-time information basis. Before 2021, the HOC was purchasing only cables and batteries. Purchase was expanded to include thermoplastics in 2021, and CRTs in 2022.Prior to project commencement, the average number of fires set for metal recovery purposes (from e-waste burning) was 110 individual spots per day at the Agbogbloshie dumpsite and scrapyard. A total of about 457,898.20 pounds

(228.94 tons) of cables, 69,072 pounds (34.53 tons) of batteries, 232, 890.70 pounds (116.44) of thermoplastics and 67 CRT's have been purchased/ collected since the project began (Table 1.2). This represents substantial savings in pollution from dioxins, PM10, PM2.5, etc. from the burning of the e-waste materials, with a reduction of fires to about 60 per day.

This was prior to incorporation of Cathode Ray Tubes (CRTs) into the collection system. It is noted also that, not all fires at the area are related to e-waste processing. The unhealthy exposure of informal e-waste workers as well as other people and patrons of the markets to the toxic fumes has also been eliminated, leading to improved health outcomes.

The pilot HOC will generate lessons for future government policies.

Aluminium Grade Cables	High grade copper cables	Low grade copper cables	Steel cables
1.80	6.70	4.05	0.50
CRTs - with yolk 14''-19''	CRTs- with yolk 20''25''	CRTs with yolk above 25''	CRTs- without yolk
6.41	10.00	15.00	0.20
Lithium-ion Batteries	Dry - Cell Batteries	Unidentifiable Batteries	Thermoplastics
0.42	0.85	0.22	0.20

Table 1.1 Price for WEEE Types (per pound for cables, batteries and thermoplastics; per unit for CRTs

*Prices remained unchanged from 2020

OUTCOMES

In 2021, a total of 230,265.20 pounds (115.13 tons) of cables, batteries and thermoplastics was purchased. In 2022, 464,169.40 pounds (232.08 tons) of cables, batteries and thermoplastics, and 67 CRTs was purchased. This represents the amount of e-waste in these categories that would have been burnt for the recovery of metals with the attendant damaging pollution effects on health and the environment. The Tables 1.2 and 1.3 give the breakdown and comparison of the weights and the purchase amount of e-waste types respectively in 2020, 2021 and 2022. Figures 1.1 - 1.4 also give graphical presentation of the same information. It should be noted that CRTs are purchased in individual quantities and not by weight.

Table 1.2 Weight and Quantities of WEEE Types Purchased in 2020,2021 and 2022

Type of WEEE	Weight Purchased In 2020	Weight Purchased In 2021	Weight Purchased In 2022
Aluminium grade cables	7,317.10	40,761.50	2,780
High grade copper cables	50,012.60	116,173	213,258.70
Low grade copper cables	7,063.40	6,224.90	7,905
Steel cables	1,033.20	4,449.80	919
Lithium-ion batteries*	_	61,032	7,109
Dry cell batteries*	_	774.00	113
Unidentifiable batteries (degraded)*	_	44.00	0
Thermoplastics*	_	806.00	232,084.7
TOTAL	65,426.30	230,265.20	464,169.40

Type of WEEE	Quantity Purchased in 2020	Quantity Purchased in 2021	Quantity Purchased in 2022
** CRT's with Yolk 14"- 19"	-	-	13
** CRT's with Yolk 20"- 25"	_	-	19
** CRT's with Yolk above 25"	_	-	14
** CRT's without Yolk	_	-	21
TOTAL	_	-	67

* WEEE types not purchased in 2020
** WEEE type not purchased in 2020 and 2021

Table 1.3 Purchase Amount for WWEE Types in 2020, 2021 and 2022 (in GHS)

Type of WEEE	Purchase Amount In 2020	Purchase Amount In 2021	Purchase Amount In 2022
Aluminim grade cables	13,170.78	73,370.70	1,262.22
High grade copper cables	335,084.42	778,359.10	642,137.20
Low grade copper cables	28,606.77	25,210.85	8,792.68
Steel cables	516.60	2,224.90	406.41
Lithium-ion batteries*	-	25,633.36	225.12
Dry cell batteries*	-	648.88	96.05
Unidentifiable batteries (degraded)*	-	8.80	0
Thermoplastics*	-	161.20	652,919.68
TOTAL	377,378.57	905,617.79	1,305,389.36

Type of WEEE	Purchase Amount in 2020	Purchase Amount in 2021	Purchase Amount in 2022
** CRT's with Yolk 14"- 19"	-	-	88.33
** CRT's with Yolk 20"- 25"	_	-	180.2
** CRT's with Yolk above 25"	_	-	200
** CRT's without Yolk	_	-	4.2
TOTAL	-	-	467.73

* WEEE types not purchased in 2020
** WEEE type not purchased in 2020 and 2021

Weight of Cables Purchased in 2020, 2021 & 2022 (in thousand pounds)

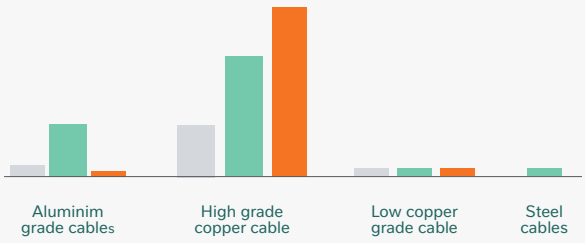


Figure 1.1 Weight of Cables Purchased in 2020, 2021 and 2022

Purchase Amount for Cables in 2020, 2021 & 2022 (in thousand GHS)

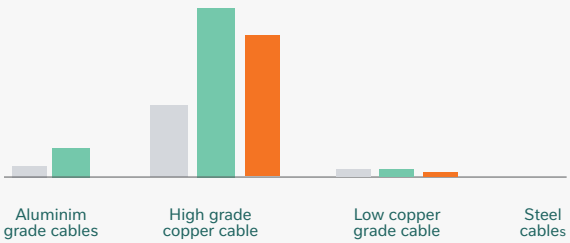


Figure 1.2 Amount of Cables Purchaed 2020,2021,2022

2020 2021 2022

Purchase Amount for Batteries and Thermoplastics in 2021 & 2022 (in thousand pounds)

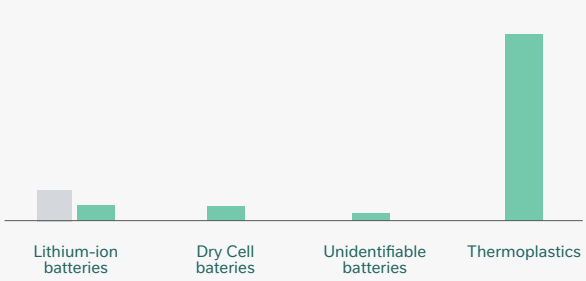


Figure 1.3 Purchase Amount for Batteries and Thermoplastics in 2021 and 2022

Purchase Amount for Batteries and Thermoplastics in 2021 & 2022 (in thousand GHS)

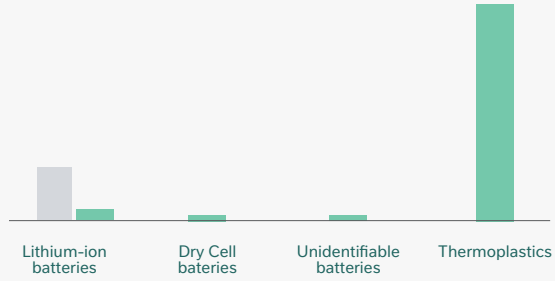


Figure 1.4 Purchase Amount for Batteries and Thermoplastics in 2021 and 2022

2020 2021

The above tables and figures illustrate the high patronage of the HOC by the informal scrap workers, which rose from **2020** to **2021** by **41.67%**, for all types, except low grade copper cables. The increased patronage could be attributed to the growing trust in the incentive payment system, particularly, the attractiveness of the system in paying competitive prices for the materials as well as instant payment mode to clients via MTN Mobile Money.

Section 2

Driving Eco-Innovation in Africa: Capacity Building for a Safe Circular Water Economy (RECIRCULATE)

FACT CORNER

Duration
2018
2022

Consultancy
£ 120,000

Partnership
Lancaster University
CSIR
Blue Skies
Sewerage Systems Ghana Ltd.


Wash and cover your water storage container
RECIRCULATE
for a healthy life
RECIRCULATE PROJECT

OVERVIEW

The "Driving Eco-Innovation in Africa: Capacity Building for a Safe Circular Water Economy" project, known by the moniker "RECIRCULATE", was a £7 million action-oriented research project funded by UK Research and Innovation (UKRI) through the Global Challenges Research Fund implemented in 7 countries including Ghana, Nigeria, Zambia, Botswana, Mozambique, Kenya and Uganda.

The following research areas were explored in **RECIRCULATE:**

- Water for sanitation and health;
- Water for energy production;
- Water for food production; and
- Water, pathogens and health.

OBJECTIVES

- To understand how African eco-innovation systems work, how they differ from European models, and what innovations would be needed to achieve Sustainable Development Goals (SDGs) 8 and 13;
- To grow the capacity and capability in Africa's eco-innovation community by developing and promoting innovations through better-skilled people;
- To establish African research organisations as 'anchor' institutions that drive and sustain change; To enable African researchers to co-design ambitious eco-innovation projects aimed at delivering a safe circular water economy for Africa

AIM

To drive eco-innovation in Africa through capacity-building for a safe circular water economy

Through these research lenses, the project was catalogued into 5 Work Packages (WP):

WP1 – Entrepreneurship and Innovation;
WP2 – Health and Sanitation;
WP3 – Water for Food Production;
WP4 – Water for Energy Production; and
WP5 – Water, Pathogens and Health.

GreenAd worked together with the Institute of Industrial Research (IIR), Crop Research Institute (CRI), and Water Research Institute (WRI) of the Council for Scientific and Industrial Research (CSIR), and the Blue Skies Ghana Limited to implement Work Package 2 in two communities in the Greater Accra Region – Gbegbeyise and Madina Zongo.

WORK PACKAGE 2: HEALTH AND SANITATION

The last two decades have seen much improvement in potable (safe to drink) water supply to millions of people living in informal settlements that partly characterise Africa's urban areas.

This potable water is usually provided via standpipes shared by several households. However, whilst this has improved, the availability of potable water to many unplanned settlements, the potential benefits are severely compromised by sewage contamination around the point of use. This is referred to as 'the last 100 metres' where water is transported from pumps to homes. The risk of contamination is exacerbated as informal dwellers typically rely on toilets draining into poorly built pits or septic tanks, which often leak sewage material into the local environment. The resulting contamination of potable water and food causes high levels of ill-health and childhood malaise and, in turn, individual and household poverty. Improving local sanitary environments would therefore directly address multiple SDGs.

The core research question the work package sought to answer was "how does 'the last 100 metres' problem manifest itself across a range of contexts and can we identify interventions (eco-innovations and/or changes to practice) that

reduce contamination in those contexts?" The objectives driving implementation of this work package were:

- **To institute an intervention to optimise reduction of localised contamination of drinking water;**
- **To provide a platform for sustainable conversion of waste into products such as fertiliser and energy;**
- **To stimulate a sustained interest in safe-guarding of Water Sanitation and Hygiene (WASH) facilities at source; and**
- **To create a WASH Vaccine model which will benefit both humans and the environment.**

Water quality monitoring was conducted in the communities to measure water quality at five different stages of the water journey into people's homes. These included the main treatment point at the Ghana Water Company Limited / Booster Station, the feeder line before entering the community, the community standpipe, water stored in poly-tanks and finally, water stored in containers at the various households. However, our particular focus was contamination of drinking water between the standpipe and storage of water in the home - the "Last 100 metres" of the water journey. Our finding indicated that water quality from the main treatment point to the community standpipe was good and not contaminated. It was at the point of storage in the homes that the water got severely contaminated, with high levels of faecal coliforms. Gbegbeyise was chosen as the intervention community, whilst Madina Zongo was the control community. Several interventions were undertaken in Gbegbeyise to improve the water quality situation in the homes. These included a mix of soft and hardware interventions. Community members were trained in proper WASH practices by "adolescent change agents" from the community.

Ownership of the project was a key indicator of project success and was marked by the community members accepting and embracing the water and sanitation interventions (both technical and social). An example of this was the immense participation of community members in community clean-up exercises and the repair of drains. Overall, there was a significant reduction in open defecation because of the interventions in the project communities.

Visit http://recirculate.global/ to learn more

Adolescents taking part in a community clean-up exercise

INTERVENTIONS

1 Building of 20 additional toilets for selected households to improve toilet coverage in the community (2021-2022). The objective of building toilets was to improve coverage, reduce the menace of flying toilets and open defecation

2 Toilet dislodge and repair -The objective of emptying 28 cesspit tanks and repairing was to reduce spillage and contamination of ground water by overflowing/cracked septic tanks that had not been emptied in years (2020-2022)

3 Drain and Tap/Water connection repair and upgrade to improve upon drainage, sanitation and water quality by reducing the incidence of leaking pipes installed in drains (2020-2021)

INTERVENTIONS

4 Provision of handwashing facilities for 10 toilets to improve on personal hygiene practices of residents after using the toilets and to encourage the use of soap(2021)

5 Community clean-up and deployment of waste skip to reduce the dumping of refuse in drains, behind homes and by the side of the roads (2020-2022)

Section 3

Accelerating the Adoption of the Circular Demonstration Systems for Improved Health Outcomes (ACTUATE)

FACT CORNER

Duration
2019
2022

Consultancy
£ 20,000

Partnership
Lancaster University
CSIR
HATOF Foundation
Blue Skies
Umar Bun Hatab Islamic School


SEGREGATE TO PROTECT
ORGANIC
PLASTIC
PAPER
METAL
GLASS
E-WASTE
BELAQUA
PEACE

OVERVIEW

The "Accelerating the Adoption of the Circular Sanitation Demonstration Systems for Improved Health Outcomes" project, known by the moniker "ACTUATE", was born out of the RECIRCULATE project and encouraged the adoption of the anaerobic digester technology and circular economy by showcasing the benefits through co-delivery of community-based demonstration systems in Ghana (and also in Nigeria). A biodigester was designed and built by the Institute of Industrial Research of CSIR and installed at the Umar Bun Hatab Basic School in Madina Zongo. It served to demonstrate, to the students and community residents, the process of converting organic waste and faecal matter into useable energy. The school provided an empty office which was renovated into a science laboratory, furnished with books, scientific apparatus, TV, printer, laptop, and internet to facilitate the teaching and learning of science. The laboratory was also fitted with a light bulb and cooking stove, both connected to the biodigester system, to show the end use of biogas as a source of electricity and gas for cooking.

The students had several engagement sessions with the GreenAd team as well as teams from CSIR and Blue Skies and educated on various waste management concepts including waste segregation, the 3Rs (reduce, reuse, recycle), composting and waste-to-energy conversion. The students were introduced to a series of games at some of the sessions (led by GreenAd) that depicted ways to properly segregate waste as well as protect the environment generally.

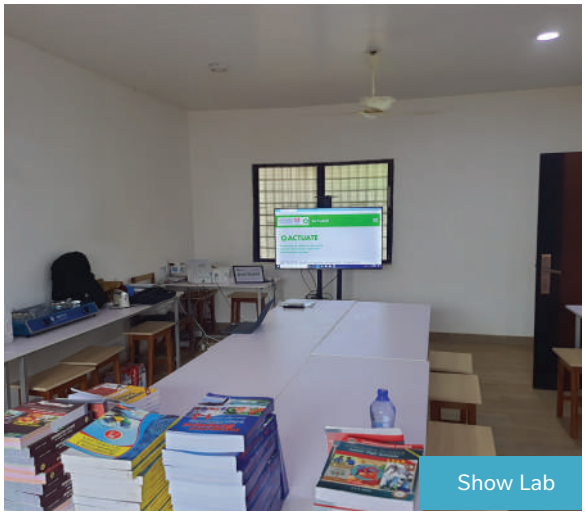
OBJECTIVES

- Co-create two pilot off-grid anaerobic digestion demonstrator facilities (biodigesters) at the Umar Bun Hatab Islamic School in Madina Zongo, Accra, Ghana (and the University of Benin in Benin City, Nigeria);
- Support waste segregation and collection for processing on the demonstrator sites;
- Provide appropriate energy (light, cooking, electricity) for the community school and university campus facilities in which the demonstrators are embedded;
- Highlight issues of hygiene around waste and how to reduce illness;
- Add value to the waste from anaerobic digestion as a soil conditioner and/or sustainable fertiliser for local food crops;
- Promote understanding of the safe circular economy paradigm and enable cultural and generation change within West Africa for wider uptake and adoption of the technology

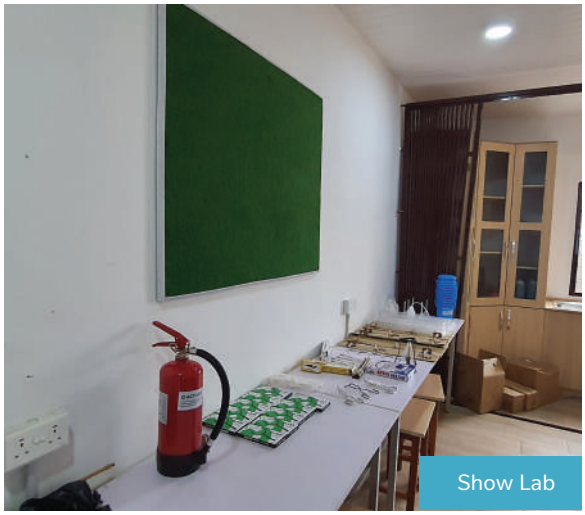
AIM

To drive eco-innovation in Africa through capacity-building for a safe circular water economy

Demonstrator biodigester



Show Lab



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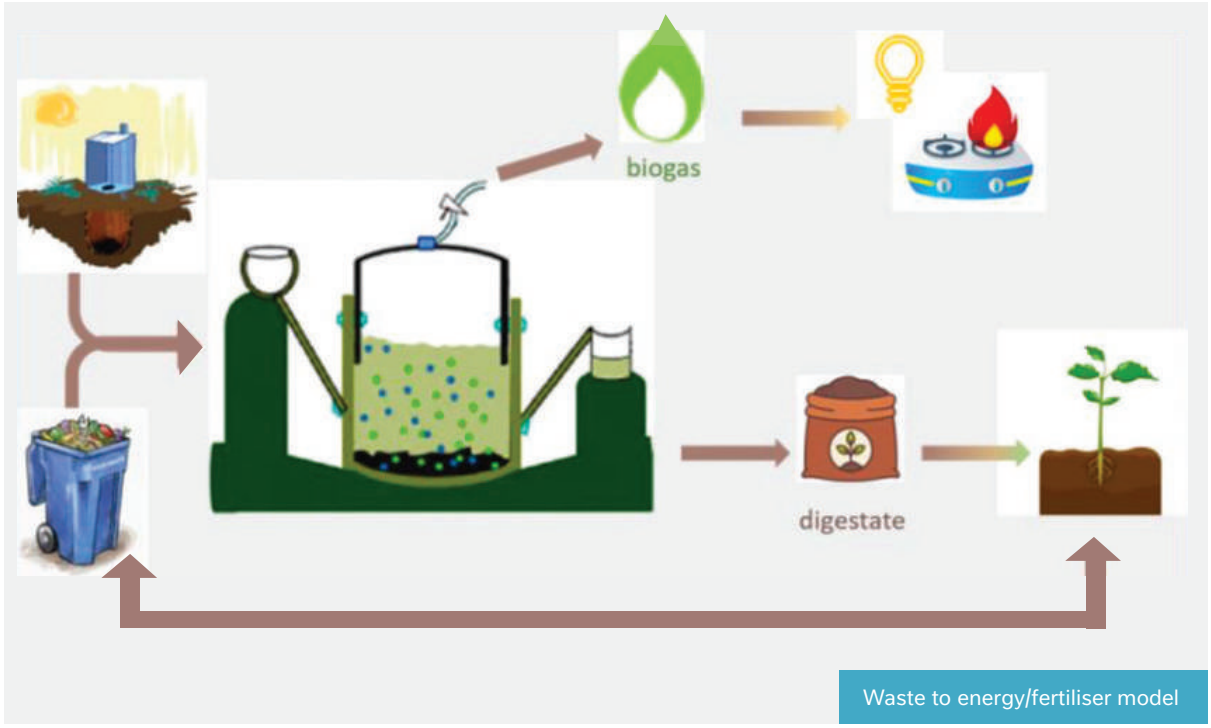


Waste to energy/fertiliser model

Students brainstorming on ways to protect the environment

Students taking part in a waste segregation game

A teacher instructing students on how to play the waste segregation game

Section 4

Communication & Outreach Strategy for Mercury Management in Ghana

FACT CORNER

Duration
2022

Consultancy
£56,000

Client

OVERVIEW

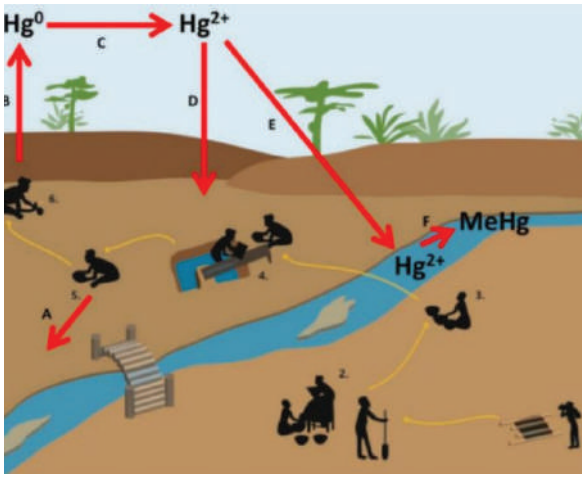
Artisanal and Small-Scale Gold Mining (ASGM) activities have increased steadily since 1989 and the sector now accounts for 30% of Ghana's total gold output. The sector supports many livelihoods, employing an estimated one million people and supporting approximately 4.5 million more. Approximately 80% of elemental mercury imported is used in ASGM operations to recover gold. The Artisanal Gold Council Report in 2016 estimated that 70 tonnes of mercury is used in the ASGM industry in Ghana.

OBJECTIVES

- Raise awareness and increase knowledge on the environmental health risk of mercury mismanagement;
- Change mindset and trigger action toward cleaner practices and technologies;
- Get buy-in and support from relevant communities in implementing the Government's program on mercury management in ASGM; &
- Design and develop communication materials targeting different audiences and stakeholders as identified in the strategy.

The ASGM sector has been noted as a significant source of mercury emissions and releases. The informal, unsafe and unregulated nature of mercury use creates a legacy of severe adverse and irreversible environmental and health damage, including soil and water contamination and bioaccumulation in food chains. It is therefore a priority to reduce, and where feasible, eliminate mercury use as required in Article 7 of the Minamata Convention. In this regard, Ghana, as one of five African countries participating in the Global Environment Facility-funded Africa Environmental Health and Pollution Management Programme (whose objective is to reduce exposure to mercury and regulate mercury use in ASGM), is expected to provide strategies to counter this menace. A key strategy is to raise awareness and change behaviour among miners and people living in mining communities, especially vulnerable groups such as women and children.

GreenAd won the contract and successfully delivered the outreach/communication strategy on the environmental health risks of mercury management to help change mindsets and move mercury users in the ASGM sector towards cleaner practices and technologies to EPA and the World Bank. The project implementation was, however, a collaborative effort between the EPA and GreenAd, which began in October 2021 and completed in August 2022.



Mercury Cycle in a Typical ASGM Process

KEY

Numbers represent key steps in the ASGM process:

1. Excavation
2. Crushing & Grinding
3. Shifting/shanking
4. Washing/sluicing
5. Amalgamation
6. Burning

Letters represent key steps in the mercury cycle:

a. Residual mercury from amalgamation may be discarded in local soil and water
b. Volatilisation of elemental mercury into the atmosphere
c. Oxidation of elemental mercury
e. Deposition onto local terrestrial systems
f. Deposition onto local aquatic systems
g. Methylation of inorganic mercury to methyl mercury

OUTPUTS

AFRICA ENVIRONMENTAL HEALTH AND POLLUTION MANAGEMENT PROGRAMME

Outreach and Communication Strategy for Mercury Management in Artisanal and Small-Scale Gold Mining in Ghana

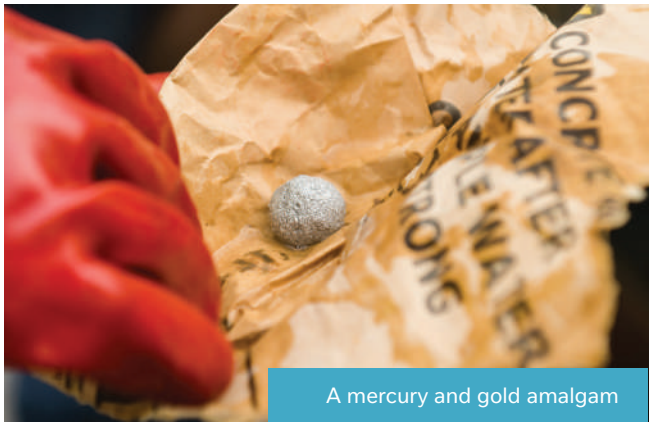
epa

THE WORLD BANK

A miner handling mercury whilst wearing hand gloves

Gold concentrate being poured onto a sluice board

A miner mixing gold concentrate with mercury using hand gloves



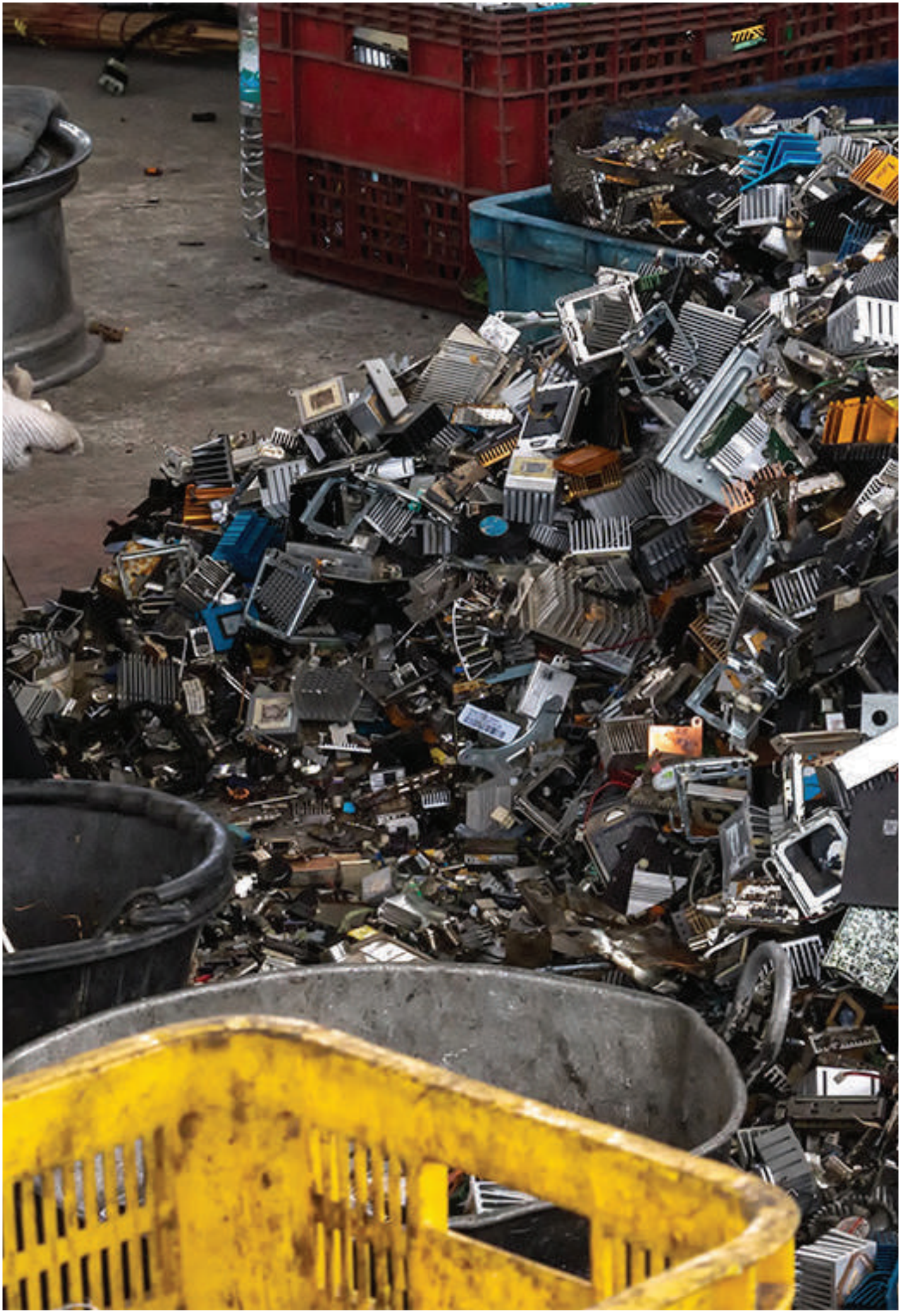
A mercury and gold amalgam

A miner handling a gold amalgam while wearing hand gloves

A miner preparing ore for washing

Section 5

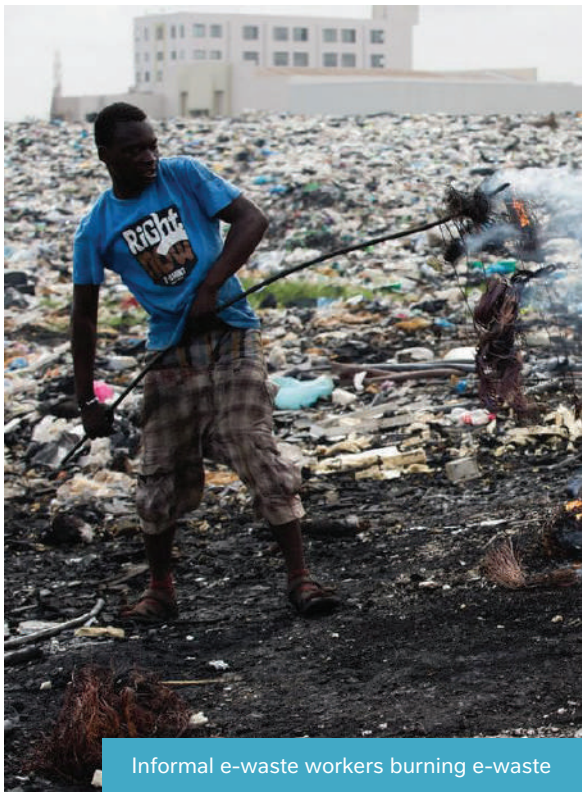
Publication on Decade of E-Waste Pioneering Work in Ghana



OVERVIEW

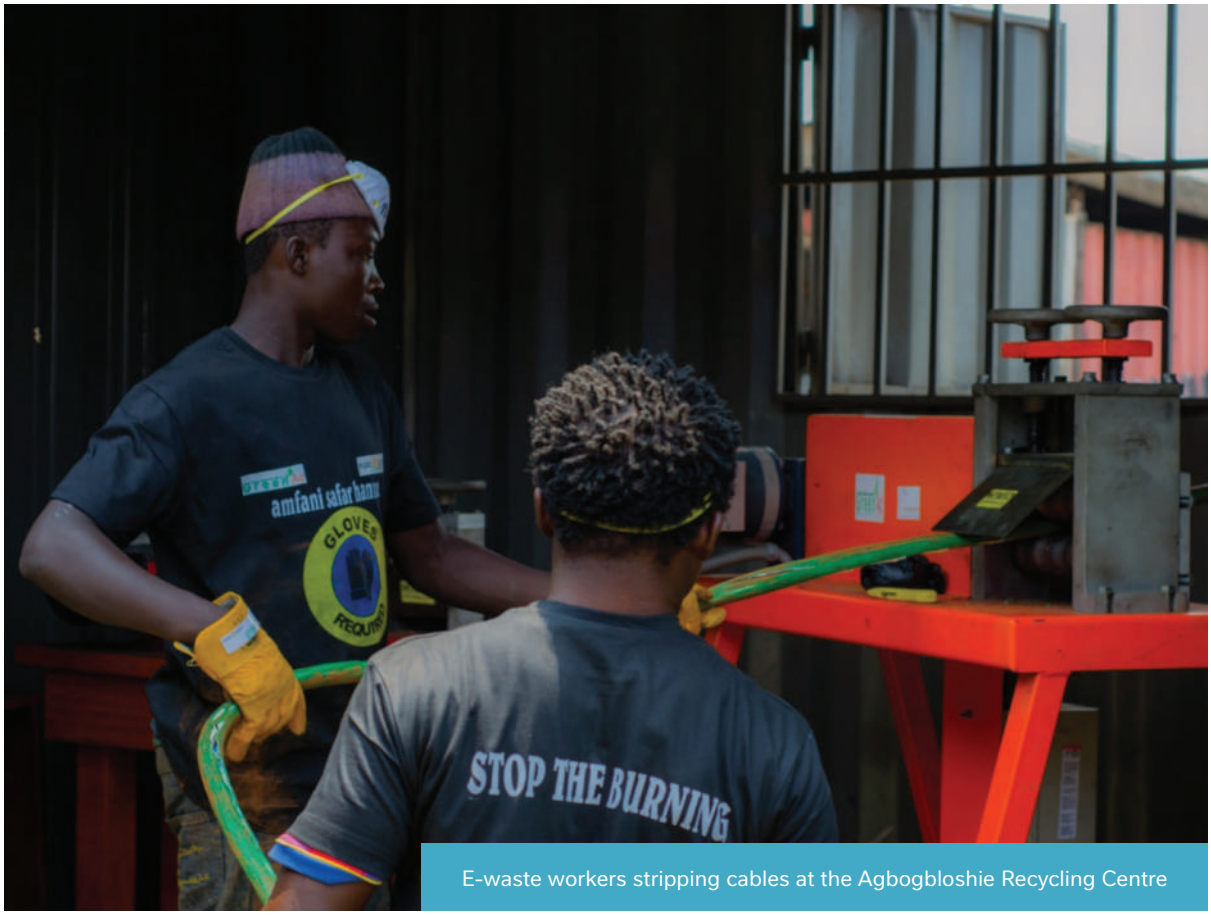
Until 2009, GreenAd maintained focus on three core areas of: partnership in research on health and environment; environmental education; community sanitation and waste management; when emphasis shifted to what was considered then a looming threat in the waste sector – the dumping, crude recycling, and pollution from WEEE – particularly at Agbogbloshie. The sector was considered highly problematic, because of the advent of Information and Communication Technology (ICT), with the Government promoting an agenda of computer literacy, increasing ICT deployment in institutions, public and private sectors, coupled with globalization, more electronic and electrical equipment (EEE) was being acquired. However, with no formal mechanism to manage the end-of-life EEE, the quantum of local E-waste generation combined with the global dumping was certain to reach a tipping point.

The absence of any public sector interest or policy, nor a private sector initiative in E-waste management obliged GreenAd to step into the uncharted e-waste sector to develop a proposal for managing e-waste: "A Proposal for the Sound Management of E-waste in Ghana". GreenAd has since been at the forefront of pioneering work in the safe management of e-waste and publication of several e-waste studies in the country. The publication "Decade of E-Waste Pioneering Work in Ghana" documents the journey and contributions made in the sector and the quantum of savings on emissions and pollution to the environment. It will serve as a historical account and knowledge repository for the benefit of other CSOs or NGOs working in the sector or related sectors. It will also be a resource material pointing to other related publications for governmental and academic institutions, other researchers and students. Partnerships have been key in achieving our shared goals. Our partners in the e-waste management journey included the EPA, MESTI, Pure Earth, Greater Accra Scrap Dealers Association (GASDA), the National Youth Authority, RAW Materials Group AB, Nordic Climate Facility, Swiss Federal Laboratories for Material Science and Technology (EMPA), World Bank, Secretariate of the Basel Convention, Oeko Institute, GIZ and the KfW.



Informal e-waste workers burning e-waste

E-waste worker mobilising colleagues for education on harmful recycling practices



E-waste workers stripping cables at the Agbogbloshie Recycling Centre

Electronic waste at a dumpsite

Section 6

Pharmaceutical & Cosmetic Waste Management Proposal

THE PROBLEM

The increasing use of pharmaceutical and cosmetic products and generation of wastes including hospital waste, across the country, brings with it an urgent threat to human and environmental health: the proliferation of unmanaged pharmaceutical and cosmetic and hospital wastes. The wastes are often dumped in unlined dumpsites, crushed, and buried, or by other less desirable disposal methods. These wastes drive some of the world's most pressing public health crises, including:

- **Antimicrobial resistance – mutation of microbes exposed to chemical and hormonal compounds which causes them to no longer respond to medicines, making infections in humans, animals and plants harder to treat;**

- **Water and soil contamination: leaching of chemicals and hormonal compounds into water and soil where they can disrupt the cellular functioning of plants, animals and people; and**

- **Plastic pollution of pharmaceutical and cosmetic packaging.**

Ghana has strong policies/regulatory framework and institutional arrangements to manage these wastes, however, the requisite infrastructure and systems lag behind. The most common methods of disposal are inadequate and unacceptable, not even the practice of burying or low-heat incineration, which equally pose major threats to human health and the environment.

Clearly, this is another threatening but neglected waste management area that GreenAd with its partners has initiated action towards exploring environmentally sound and safe method of disposal and management in Ghana. The key stakeholders approached and who are ready, not only to lend support but to actively participate in the programme include: the Food and Drugs Authority, EPA, Pharmacy Council and the Health Facilities Regulatory Agency.

OBJECTIVES

GreenAd has identified the improper management of pharmaceutical and cosmetic and hospital wastes as a pressing national issue and is in the process of developing a proposal jointly with key stakeholders to safely and effectively manage these wastes.

Section 7

GreenAd and the SDGs – Contribution to the SDGs in 2021 and 2022

- ○ MESTI/KFW Incentive Payment System
- ○ RECIRCULATE – WP2

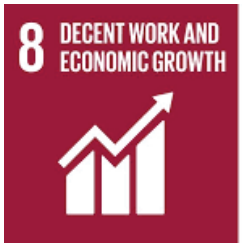
- ○ RECIRCULATE – WP2

- ● MESTI/KFW Incentive Payment System
- ● RECIRCULATE – WP2
- ○ ACTUATE
- ● Communication and Outreach Strategy for Mercury Management in Ghana

- ○ RECIRCULATE – WP2
- ● ACTUATE
- ● Communication & Outreach Strategy for Mercury Management in Ghana

- ● RECIRCULATE – WP2
- ○ ACTUATE

- ● RECIRCULATE – WP2



- ● MESTI/KFW Incentive Payment System
- ○ RECIRCULATE – WP2
- ● Communication and Outreach Strategy for Mercury Management in Ghana

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- ○ RECIRCULATE – WP2
- ○ ACTUATE

- ● MESTI/KFW Incentive Payment System
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- ● MESTI/KFW Incentive Payment System
- ○ RECIRCULATE – WP2
- ○ Communication and Outreach Strategy for Mercury Management in Ghana

KEY ● Direct Contribution ○ Indirect Contribution

Section 8

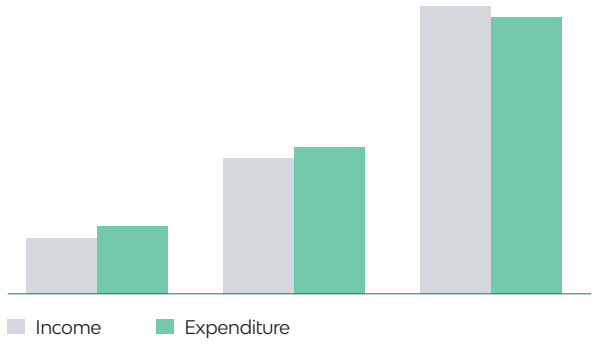
Income & Expenditure

FISCAL YEAR : 2021

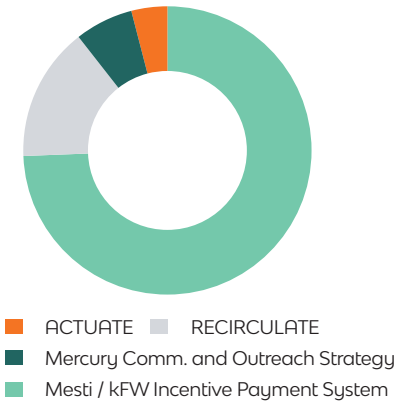
Income
2.1M

Expenditure
1.9M

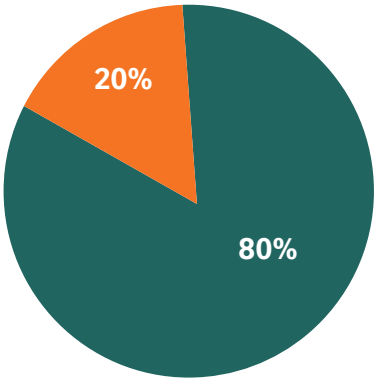
260,106 GHS
Surplus of Income Over Expenditure



Income and Expenditure Trend
All amounts are in millions GHS



Income by Project 2021 (in GHS)
All amounts are in millions GHS



Total Expenditure 2021 (GHS)
- Management & Adminstration
- Projects

FISCAL YEAR : 2022

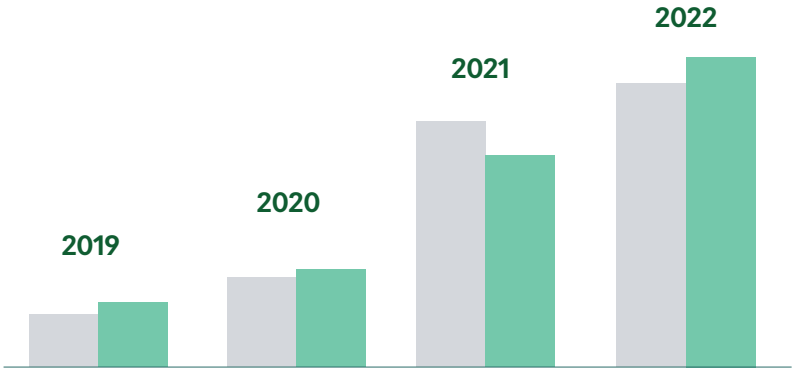
Income
2.7M

Expenditure
2.9M

-149,768 GHS
Deficit

Income by Project 2022 (in GHS)
All amounts are in millions GHS

Total Expenditure Breakdown



Total Expenditure 2021 (GHS)
Income
Expenditure

Section 9

Our Team & Partners

OUR TEAM

Yaw Amoyaw-Osei
Executive Director

Dr. Edith Clarke
Director

Elizabeth Amoyaw-Osei
Director, Finance and Administration

Bennett Akuffo
Project Manager

Kojo Amoyaw-Osei
Impact Manager

Ewurama Kakraba-Ampeh
Project Coordinator

Benjamin Gyawu
Accountant

K. Kwakye Mamphey
Volunteer

Rita Fosua Obeng
Project Coordinator

Seth Agyekum
Incentive Payment Officer

Adam Kojo
E-Waste Handlers

Alhassan Osumanu
E-Waste Handlers

Abdulai Issah
E-Waste Handlers

Iddrisu Issah
E-Waste Handlers

Mashood Mohammed
E-Waste Handlers

Yussif Kojo
E-Waste Handlers

OUR PARTNERS

Lancaster University

SEWERAGE SYSTEMS GHANA LTD.
clean environment green energy

Partner with Us

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