

OASWSS
BEACH CLEAN
WITH BIG
DREAM
PLEASURE
BEACH 2019

Introduction

This document is a report on work carried out by a group of individuals who joined forces as volunteers and cleaned a section of the shoreline between Nungua (a town in the Ledzokuku-Krowor Municipal District in the Greater Accra Region of Ghana) and Sakumono (a town in the Tema Metropolitan district, Greater Accra Region of Ghana).

It contains information about the individuals who were led by an ex-resident of Sakumono who has a product invention he has named OASWSS, that could help individuals, households and businesses separate solid waste materials at source - i.e. as they are being generated so that they can generate income with clean waste materials.

The individuals share common aims and objectives and plan to advance with a dedicated team of Solid Waste and Recycling Advisors they have created.

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Main objectives

1. To see Ghana and its shores become one of the cleanest in the world
2. To encourage and promote the 4R's: Refuse, Reduce, Re-use and Recycle
3. To educate the public about plastics use and dangers associated
4. To advocate for a ban on single-use plastics

Background

In 2018, a Ghanaian citizen by the name Benard Nii-Odartey Boye conceived OASWSS while thinking of solutions to the solid waste management problem in Ghana.

Mr Boye migrated to England in 1996 when he was in his teens and returns for visits but did not notice the sharp rise in single-use plastics and its devastating effects on the country's environs until he visited, during a visit in 2018, a beach he knew as a child and found it badly littered with plastics and other waste materials and abandoned, along with a Ramsar certified lagoon that meets it.

The beach is known as Mighty beach. It's nestled along the Gulf of Guinea in Ghana's South-eastern region and neighbours Tema Harbour (Ghana's largest port) and Sakumono Estate (a real estate development in Sakumono) where Mr Boye formally resided and currently stays during visits.

Sakumono was formally a small fishing village near one of two lagoons in the area. The first is known as Mukwe which meets the sea at Mighty beach.

The second is Sakumono II which is nearer to the harbour and fishing village. The fishing village is dwarfed by mushrooming towns around it, but it still exists as a fishing village and fishing is still the primary activity.

As a pictorial representation, Mr Boye likens a section of Mighty Beach before his departure in 1996 to picture A overleaf, a picture he took of a beach in Cornwall - England, in spring 2018.

Picture A



The Lizard, Cornwall, England. Spring 2018

The Shoreline today and issues affecting it

1. There is no solid waste infrastructure for the beach and rock revetments now lining the shoreline from the abandoned Mighty beach towards the harbour serve as a building platform for a growing number of bars and restaurants who are with poor or no waste management facilities, so the bulk of waste they generate end up in the sea or are in the nooks and crannies of the rocks.
2. Fishing and other sea front activities take place at a new location named Titanic beach, which is closer to the village and harbour and has a long-standing problem of open defecation.
3. Fishermen leave behind empty and half-drunk water sachets when drawing their boats and nets, and directly dump plastics and other waste materials they frequently fetch with their catches on the shore.
4. Irresponsible beach goers generate rubbish they fail to leave with.

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5. There are citizens who deliberately go to the shore to bury household waste.

Pictures B - G are pictures Mr Boye took of sections of the shoreline in July 2018

Picture B



This is Titanic beach where fishing and other seafront activities now take place

Picture C



The waves churn plastic waste that shred into pieces against the rocks

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Picture D



Rock revetments now block access to sections of the shoreline

Picture E



This pile was generated by a bar and will eventually end up scattered in the immediate environment

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Picture F



Construction workers construct new bars and restaurants

Picture G



Burning plastics and other waste materials pollute the environment with poisonous gasses. But this is common practice all over the country

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OASWSS (Open – Air Solid Waste Separation System)

In July 2018, Mr Boye conceived OASWSS to provide a solution to the solid waste management problem in Ghana.

To be pronounced Oasis, OASWSS is an outdoor solid waste management facility and water harvester that helps individuals, households and businesses separate and prepare solid waste materials for re-use and recycle.

Solid waste is described as discarded waste materials that are solid, and which when discarded collectively by individuals, homes and businesses become MSW (Municipal solid waste).

OASWSS has a minimum of four stands that are side by side of each other, but the number and size of the stands can vary depending on the types of solid waste materials generated and their rate and source of generation – i.e. at a bar, home, business or public place.

Information signs on the stands point users to the waste materials assigned to each stand.

One stand features a bucket with a lid and perforated holes for collecting organic waste. The remaining stands hung side-by-side, durable and re-usable see-through bags for collecting inorganic lightweight materials like plastics and cans.

In many societies, there are established and effective methods for collecting glass, which can be a pollutant but poses safety risks collecting so will not be handled by OASWSS.

Stands for a wheelie bin and other waste collection facilities can be added as extras.

The rim of the compost bucket hinge on tracks about three feet high in the middle of one stand with four legs to allow the compost bucket to draw in and out of the stand.

The water harvester sits above the compost bucket in the same stand with a surface area that is elevated to about five feet.

The stands match in height and the stands that hung the see-through bags are with holders that keep the mouths of the bags open.

The see-through bags differ in quality and design but will be reusable, lightweight, durable and waterproof at all times. Some will feature a slit through which a hand can reach to fetch waste materials, and some will have a drawstring to pull to seal their contents.

The bags have drainage or breathing holes but do not accommodate liquid of any kind. Hence, all water bottles and sachets with leftover drinking water must be harvested in the water harvester before entering the bags.

The water harvester collects rain and leftover drinking water it releases for use via a tap along its base. The water is for washing only but can be treated and made safe for drinking.

OASWSS considers all other types of liquid waste contaminants and containers previously containing them must be drained dry elsewhere, or washed and dry before entering the bags.

The water harvester, compost bucket and see-through bags require emptying when full and can be removed, emptied and replaced.

The see-through bags make it easy to identify the waste streams and the perforated holes in the compost buckets will enable aerobic digestion of organic matter to allow the composting process to begin in the buckets.

Odour generated by the composting process can be controlled with ash and sawdust.

Installation requires service personnel and can be installed for temporary or permanent use anywhere a portion of its legs can be planted, or a solid structure exists to attach part of its frame to.

Sustainable materials like wood can be used for its construction and features like locks can be added during installation.

One main benefit of OASWSS is that, it divides solid waste materials into tidy portions for easy treatment and transportation, and provides individuals, households and businesses with the opportunity to generate income with household waste.

Furthermore, OASWSS has the capacity to create jobs in solid waste management and recycling.



A prototype version of OASWSS showing a water harvester; organic waste bin, sacks for collecting plastic bottles and cans, and a web for bottle bricks and polyethylene bags

Journey so far

1. Mr Boye visited Ghana from June to September 2018. Upon his return, he began organising a beach clean-up exercise for Titanic beach which took place for two weeks in January 2019 and comprised of litter picking and the separation and sorting of solid waste materials.

In November 2018, Mr Boye created a Facebook fundraiser that pleaded for volunteers, funds and equipment to help clean up a beach in Ghana. It

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raised over £700 and recruited one British volunteer, and this enabled Mr Boye to return to Ghana in December 2018 to begin preparations.

The aim of the exercise is to highlight the problem of waste management in Ghana; show the public how to value waste materials and cause conversations capable of causing a mindset change to be had.

To achieve this Mr Boye purchased equipment locally and recruited over fifteen local volunteers with help from a local youth club member.

The clean-up exercise commenced a week after the new year celebrations and a day after the British volunteer arrived with needed equipment and educational material.

During the exercise, Mr Boye funded the cost of meals for the team and provided refreshments.

One volunteer runs a bar on the beach called Big Dream Pleasure Beach, which happens to be the only bar directly on the shore where he made room available for team briefings, lunch, breaks and refreshments.

The beach spans about 200 meters between two sets of rock revetments, and Mr Boye and his team combed it in three days filling numerous refuse sacks with litter (majority of which was plastic), which they sorted in a temporary sorting area they created nearby.

The team emptied and separated clean to semi-clean waste materials to sell in clear plastic bags, and this more than halved the overall volume of waste they self-delivered to landfill.

In week two:

- i. The team tied bin liners to poles around Big Dream and put up signs urging beach goers to keep the beach clean
- ii. the British volunteer who is a small business owner in plastics recycling delivered a workshop which highlighted some of the dangers associated with the various types of plastics, and

- iii. the team met with community elders who assured them of their support and promised to deliver a message via a gong-gong beater and news van that – ‘it’s an offence to litter or defecate on the beach’.

Additionally, Mr Boye planted a unit of OASWSS at Big Dream which is separately collecting rain and leftover drinking water, organic waste, empty pure water sachets, mixed metal and plastic bottles in four stands, and has a fifth stand for a pre-existing wheelie bin.

2. During his time in Ghana from June to September 2018, Mr Boye attended a public event in Accra titled **‘Plastic Waste in Ghana, how do we get rid of it’**, and inspired by the event soon after constructed a prototype of OASWSS he began testing at a relative’s address.

Mr Boye visited the ***EPA (Environment Protection Agency)*** offices in Accra and learned about measures taken by government to curb the waste management crises.

Mr Boye visited the two sites of ***ACARP (Accra Compost and Recycling Plant)*** and learned about their operations and cost savings pre-sorted municipal waste present to industry.

Mr Boye lastly, attended the 2018 ***Chale Wote Street Art festival*** (a festival of international repute held in the centre of the capital each year) and is of the view that, festivals that attract foreigners already familiar with the concept behind OASWSS like it will help accelerate the transformation to the good waste management practices he promotes.

Mr Boye plans to manufacture OASWSS as a product and offer waste management services to homes, businesses, festival and event organisers and managers of public spaces.

OASWSS as a product

As a standalone product, OASWSS will come with easy to follow instructions for temporary or permanent installations. However, responsibility for disposing of the waste materials it collects lie with users

who may require a waste management service or services to empty and replace the see-through bags and compost bin, empty and wash food and beverage containers for quality waste, and to compost; compress, sell, recycle and dispose of solid waste materials.

OASWSS as a service

OASWSS as a product generates solid waste management services that are easy to manage by the waste generators themselves, and as it reduces the need for the heavy-duty collection vehicles and mechanical plants that come with high operational costs, such services can be offered at a much-reduced cost by OASWSS service personnel.

Hence, as well as manufacturing OASWSS Mr Boye plans to deliver the related service requirements and welcomes partnerships from others who share his vision of a cleaner, healthier and safer world.

The Team



“I’m a former resident of Sakumono Estate and organised the beach clean-up because

**BENARD NII-ODARTEY
BOYE (Beach clean
organiser & OASWSS
inventor)**

I’m concerned about the health, environmental and aesthetic impacts of poorly managed waste. I’m a Self-

waste.

Employed Sports Coach and a volunteer at an Environment centre that voices concern for the environment and organises local and national events promoting sustainability.”



“I am an artist and run an upcycling project in the UK called **smptree**. Upcycling is the transformation of ‘waste’ streams into new objects for local need. I also work with other organisations to encourage people to treat their waste as a valuable resource for today and tomorrow. I volunteered to join Ben’s beach clean as I thought experience might help the

**SARA MAI
(volunteer and
Plastics
Recycler)**

my project.”



“I am Kwame Antwi, a resident of Sakumono main and a Parker Operator at the Tema port. I am also a Senior youth club member. I met Odartey who is concerned about the poor sanitation in the area, I volunteered my help because I love the

**JAMES KWAME ANTWI
(Parker Operator at Tema
Port)**

and

beach and believe keeping it clean is everybody’s responsibility.”

GEORGE TETTEY (Entrepreneur)

“I am George Tettey, a local resident of Lashibi community 16 in the Tema West constituency. I am an entrepreneur and like relaxing on the beach at weekends after a hard week’s work. The sanitation problem on the beach is not conducive so I joined in the clean-up to see it improve.”



“I am Steve Essilfie, I manage Big Dream Pleasure beach which is directly on the beach so I see every day how bad the sanitation problem is on the beach and would like to see it improve. During the litter picking, I cooked lunch and provided the team with

**STEVEN ESSILFIE
(Manager - Big
Dream Pleasure
Beach)**

somewhere to meet, eat and relax.”

“I am Phillip Allotey, a local resident of Sakumono main and an ex-reporter for the Daily Post Newspaper. I joined this programme to ensure that my community and beach can be rated one of the cleaners in the world. I am a sports coach by profession and a part-time driver.”



**PHILLIP ALLOTEY
(Sports Coach & part-time Driver)**

KODJO DOGBATSEY (Driver)

“I am a resident of Sakumono Estate. I come and enjoy the beach often and I volunteered to help improve the sanitation problem at the beach. I am a driver by profession and usually use the beach road, so I always see the bad state of sanitation at the beach when driving past.”

“I am a local resident and a reggae dancehall artist. I volunteered in this clean-up exercise to see an improvement in the sanitation problem in the community and at the beach. I have a song titled ‘So Clean’ which promotes cleanliness and I can perform it at occasions to support our cause.”



**Ibrahim Musah
(Musician & Furniture Supplier)**

“I am a resident of Sakumono and a plumber by profession. Sometimes when I work on peoples gutters and drains, I find plastic and other kinds waste materials from the surrounding areas blocking them, so I joined in the clean-up to help change this.”



**Eugene Aquah
(Plumber)**



**Seidu
Alhassan
(Farmer)**

My name is Seidu Alhassan. I am a commercial farmer and a Gardener and occasionally help's Ben with gardening. Sometimes when it rains and I'm farming rice, the water floods the farm with plastics and other waste materials that inhibit the rice shoots and affect the yield.