

TRASH TO TREASURE

Transforming
Waste into
Resources





THE PROBLEM

Urbanization in Africa is rapidly accelerating, resulting in the swift growth of megacities. This population boom creates significant challenges, particularly in waste management, as expanding cities struggle to handle increasing waste effectively.



POPULATION BOOM AND URBAN GROWTH

Africa's population will double by 2050. Megacities like Lagos, Kinshasa, and Cairo are expanding quickly due to both natural population growth and rural-to-urban migration.

WASTE MANAGEMENT CHALLENGES

The rapid increase in urban populations in African megacities is leading to a surge in waste generation and pollution, placing a significant strain on already inadequate infrastructure. Limited financial resources often hinder the investment needed for advanced waste management technology and the training of skilled personnel. Urbanization frequently outpaces the development of waste management systems, leaving informal settlements underserved and resulting in illegal dumping and pollution. Additionally, low public awareness and participation exacerbate the problem, contributing to widespread littering.

THE FIMA SOLUTION

Addressing the waste management challenges from Africa's population growth and urban expansion is essential. At FIMA Industries, we are committed to making a difference through sustainable practices and innovative solutions to tackle this pressing issue.

Coping with waste management is a major challenge due to rising populations and urbanization, increasing waste volumes and impacting humans and animals. Preventing waste and ensuring proper management and disposal are crucial.

Environmental innovations involve eco-friendly products, integrating sustainability into operations, and proactive planet preservation. For a livable environment, the focus is on reducing carbon emissions, preserving biodiversity, prioritizing renewable energy, and advocating for conservation to ensure a thriving planet for future generations.



COLLECTING



SHREDDING



COMPOSTING

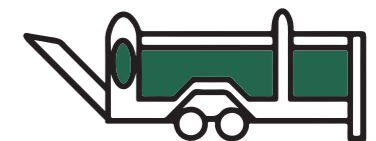


OUR COMPETENCES

FIMA Industries offers specialized mechanical pre-treatment and biological processing of municipal solid waste, as well as additional necessary equipment. We provide extensive international financing support, helping secure favorable EU bank loans through export insurance agencies and managing much of the process. Additionally, we calculate CO₂ balances for treatment plants and facilitate entry into emissions trading. Our comprehensive approach ensures both effective waste management and optimal financial solutions for sustainable operations.



FIMA Industries provides comprehensive support to keep machines and plants running efficiently, offering remote monitoring, training, and seminars. With expertise in Industrial Machinery Fabrication, Banking & Finance, Heavy Equipment, and Global Trade, FIMA stands out as a key European exporter for Sub-Saharan Africa in Green Infrastructure & Waste Management. Their blend of European and African experience ensures sustainable and profitable outcomes for clients.



EXPERTISE IN WASTE

Expertise in waste management includes advanced mechanical and biological treatment of municipal solid waste (MSW).

ECO-TECH LEADER

As a leading African technology provider, we are committed to reducing the environmental challenges in Africa.

CUSTOM SCALABLE SOLUTIONS

Scalable machine designs and plant configurations, available in both mobile and stationary versions, tailored to local conditions.

FINANCING SOLUTIONS

Guidance on financing options through both vendor and client credit arrangements

EXPERT PROJECT MANAGEMENT

Comprehensive support from project development through assembly and commissioning, ensuring professional handling at every stage.

CO₂ CERTIFICATION SERVICES

Calculation of CO₂ balances for treatment plants and support with emissions certification.

WE CUSTOMIZE YOUR SOLUTION

Tailored Waste Solutions

At FIMA Industries, we tailor our waste management processes to meet your specific needs. Our comprehensive approach includes composting, shredding, and filtering, ensuring that every step is optimized for efficiency and sustainability.

Our stationary solutions handle large waste volumes efficiently, with longer operating hours and greater throughput.



OUR STATIONARY SOLUTION

When managing high volumes of waste in a single location with reliable local infrastructure, opting for a stationary model is highly advantageous. Proper preparation is critical: knowing the waste composition and anticipated volumes over time enables the plant to be designed for optimal utilization and material flow. In shift operations, stationary systems offer longer daily operating hours than mobile machines, as they eliminate downtime for refueling, engine maintenance, and material handling. Well-dimensioned stationary setups deliver greater throughput and are considerably more cost-effective than comparable mobile solutions. Moreover, the higher efficiency of electric drives compared to internal combustion engines plays a significant role in enhancing their overall efficiency.

KUMASI COMPOST AND RECYCLING PLANT (KCARP)

Location: Kumasi, GHANA
 Start of 1st operation plant: 2020
 Start of 2nd operation plant: 2022
 Capacity: 600 tons per day

WASTE MANAGEMENT PROCESSES

Explaining the stationary process



SHREDDING

The treatment process begins with household waste being broken down by a pre-shredder. If necessary, pre-sorting can occur before this step. After shredding, a drum screen separates the organics, which form the undersize fraction.



FILTERING

Manual sorting, magnetic separation, and wind sifting are used to extract recyclables from the oversize fraction. The remaining high-caloric fraction can be used to produce fuel, with baling as an optional step.



COMPOSTING

Organics are piled into windrows and turned regularly over several weeks to convert them into compost. A two-stage screening process using a drum screen ensures the compost reaches a uniform grain size and removes any contaminants.



CO₂ REDUCTION
 COMPOSTING & RECOVERY OF PLASTIC TO REDUCE GHGs EMISSION



COMPOST PRODUCTION
 PRODUCING COMPOST FROM ORGANIC WASTE



JOB CREATION
 CREATING THOUSANDS OF DIRECT AND INDIRECT JOBS, 50% WOMEN EMPLOYMENT

WE CUSTOMIZE YOUR SOLUTION

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Our adaptable machines suit areas with emerging recycling, offering flexibility and ease of transport.



OUR MOBILE SOLUTION

Adapting waste treatment machines to local conditions is crucial for countries beginning to establish a regulated waste economy. In regions where organized collection and the re-use of recycled materials are still developing, semi-mobile machines offer the flexibility to adapt as conditions evolve. Machines that are easy to transport, quick to set up, and independently powered by diesel engines can effectively address the challenges posed by emerging infrastructures. FIMA machines stand out for their user-friendliness; they are easy to learn to operate and are robust enough to tolerate occasional errors made by beginners.

INTEGRATED RECYCLING AND COMPOST PLANT (IRECOP)

Location: 14 regional capitals
Capacity: 250 tons per day

WASTE MANAGEMENT PROCESSES

Explaining the mobile process



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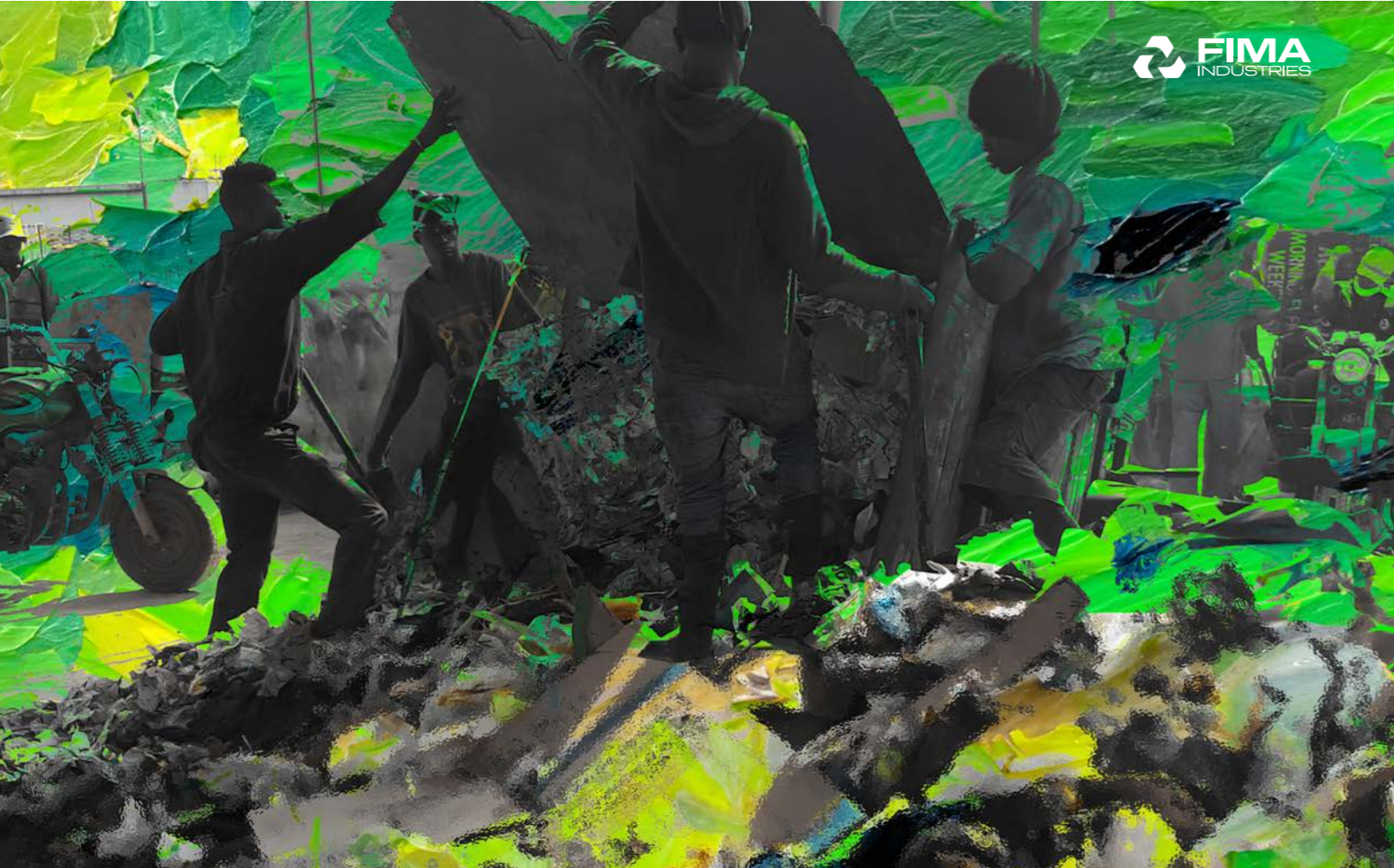
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FIMA INDUSTRIES

AND THE SUSTAINABLE DEVELOPMENT GOALS

OUR APPROACH

Each year, over 2 billion tonnes of municipal and commercial waste are generated globally, and by 2050, this figure is expected to rise to 3.4 billion tonnes (Source: World Bank 2016). As the global population increases, so do the challenges associated with escalating waste volumes. For instance, Africa's **POPULATION** is projected to **DOUBLE WITHIN THE NEXT 25 YEARS**, reaching approximately 2.5 billion people. This population surge will exacerbate **ENVIRONMENTAL ISSUES**.

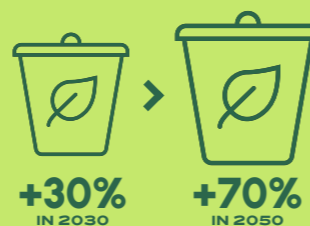
When managed correctly, **WASTE** can become a **VALUABLE RESOURCE**. In Africa, an estimated 70 to 80 percent of waste is recyclable, with about half consisting of organic material suitable for composting and use as agricultural fertilizer. A smaller portion contains vital secondary raw materials that can be reintegrated into production processes. Ideally, only non-reusable or non-reclaimable materials should end up in landfills. **RECYCLING AND COMPOSTING** not only recover resources and reduce landfill use but also **LOWER GREENHOUSE GAS** emissions. Additionally, an organized waste economy encompassing collection, separation, and processing can **CREATE JOBS** locally and beyond.

Infrastructure **WASTE** is a significant **ISSUE IN MEGACITIES**, where rapid urbanization and dense populations put immense pressure on existing systems. Problems such as inadequate waste management infrastructure, insufficient recycling facilities, and inefficient waste collection services are common. This often results in the accumulation of waste in public areas, **ILLEGAL DUMPING**, and **OVERWHELMED LANDFILLS**. Furthermore, the lack of modern waste processing technologies exacerbates pollution, contributes to greenhouse gas emissions, and poses serious **HEALTH RISKS** to residents. Addressing infrastructure waste in megacities requires substantial investment in **SUSTAINABLE WASTE MANAGEMENT SYSTEMS**, advanced recycling technologies, and effective policies to ensure the efficient handling and reduction of urban waste.

WASTE DISPOSAL (IN AFRICA)



2,01 BN. TONES OF WASTE



Source: UNEP (2018), Africa Waste Management Outlook

The Sustainable Development Goals (SDGs) were developed by a working group of the United Nations, in collaboration with thousands of stakeholders, and approved by the United Nations General Assembly. All UN member states have committed to these goals and targets for global sustainable development.

FIMA INDUSTRIES has focused on CSR (Corporate Social Responsibility) by launching the FAIR CSR program. This

program integrates and coordinates previous projects and initiatives while expanding into new areas. The company has actively worked towards the SDGs, with particular emphasis on goals related to affordable and clean energy, responsible consumption and production, and climate action. Among these, goals related to climate action, responsible consumption and production, and affordable and clean energy are considered high priority in the company's strategic decision-making.



CLIMATE ACTION: Biogenic waste can be processed separately through composting to prevent methane emissions. The use of innovative shredding and sorting technologies enables the replacement of primary raw materials with secondary ones. Implementing smart machine controls and optimized drive concepts can lower the carbon footprint of products. Electrification of machines and equipment is another key strategy. Advancing digitalization helps reduce the need for travel. Supporting customers in emerging and developing countries with project financing accelerates the implementation of waste management concepts. Applying manure close to the ground can minimize nitrogen losses and reduce odor emissions.



RESPONSIBLE CONSUMPTION AND PRODUCTION: FIMA Industrie promotes the circular economy through advanced technologies and innovations. Compost and bark mulch are utilized as organic fertilizers and to protect against soil erosion. Products are designed with an eco-friendly approach, and efforts are made to minimize tool wear and tear. Predictive maintenance concepts are implemented, ensuring efficiency and longevity. Additionally, FIMA Industrie supports continuous improvement and sustainability, positioning itself as a comprehensive solution provider. FIMA Industrie also invests in research and development to pioneer new methods of reducing environmental impact across its operations.



AFFORDABLE AND CLEAN ENERGY: Promoting woody biomass as a refuse-derived fuel serves as a replacement for fossil-based energy sources. Fermenting biogenic waste produces biogas, while waste-to-energy projects are developed to harness previously untapped energy from waste. High-quality refuse-derived fuels are generated as substitutes for fossil-based energy. Training programs focus on recovering energy from waste, and customers receive education on energy-efficient treatment processes. Moreover, collaborations with local communities aim to promote sustainable energy practices and raise awareness about the benefits of using refuse-derived fuels.

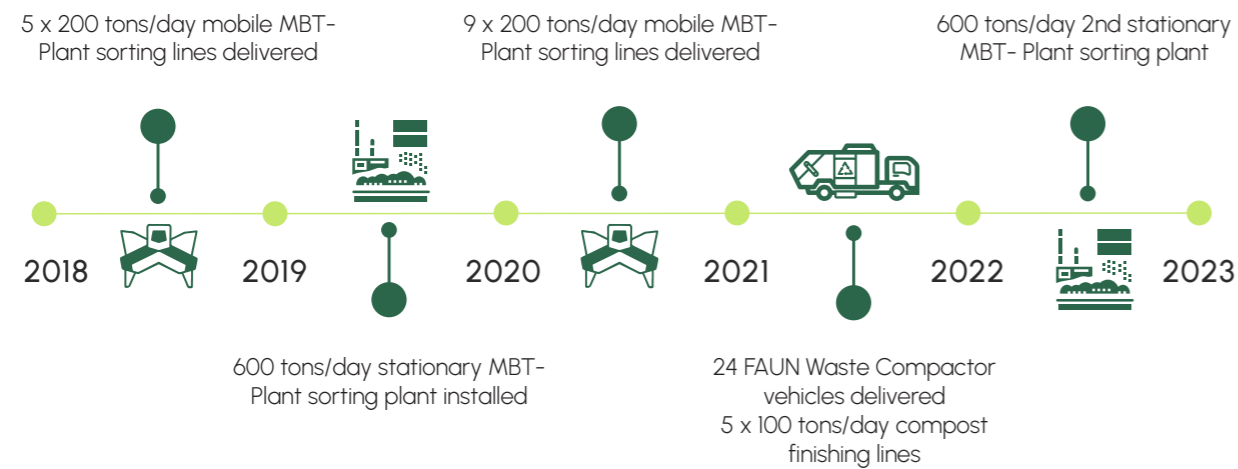


WHO IS FIMA AFRICA?

FIMA Africa is leading catalyst in bridging the infrastructure gap in Sub-Saharan Africa, particularly in environmental technologies. Committed to delivering sustainable and innovative waste treatment solutions, FIMA Africa partners with world-leading Original Equipment Manufacturers (OEMs) to bring fit-for-purpose technologies tailored to local needs. FIMA Industries is renowned for its engineering and export of advanced industrial equipment, positioning FIMA Africa as a sales agency with exclusive sales rights.

FIMA Africa specializes in providing sustainable and innovative waste treatment solutions tailored to local needs, driving both economic growth and environmental resilience. FIMA Africa leverages European Export Credit backed financing structures to ensure that its projects are not only technologically advanced but also financially viable, having secured over € 60 million in financing since 2016. FIMA Africa's team blends African and European expertise, and the company is committed to advancing the Sustainable Development Goals (SDGs), particularly in climate action, responsible resource management, and clean energy. **FIMA KEY ASSET IS IT'S UNIQUELY AFRICAN EXPERIENCE, FOOTPRINT AND NETWORK.**

OUR SUCCESS STORY



WE AIM TO PARTNER WITH THE BEST TO DELIVER THE BEST



SULO, Europe's top provider, innovates waste sorting and collection.



Tana pioneers solid waste management with robust machines and solutions.



FAUN focuses on waste disposal logistics and street cleaning technologies.



Komptech specializes in recycling and biomass treatment.



DISPOSAL:

More than 90% of waste generated in Africa is disposed of at uncontrolled dumpsites and landfills, often with associated open burning. 19 of the world's 50 biggest dumpsites are located in Africa, all in Sub-Saharan Africa



COMPOSITION:

On average, 13% of municipal solid waste MSW generated in Africa is plastic and 57% is organic waste, the bulk of which is currently dumped but which could provide significant socio-economic opportunities for countries.



RECYCLING:

In Africa, informal waste picking, driven by poverty and unemployment, handles much of the recyclable waste, yet only 4% of it is recycled. Informal pickers recover valuable materials at minimal cost to municipalities and companies.

THE ENVIRONMENTAL IMPACT OF FIMA AFRICA

With climate change, sustainable development goals and empowering local communities as the foundation of the firm's ethos, FIMA is focused on assisting clients to ensure sustainability is a firm foundation of each project we embark on. At our core we aim to imbue each client engagement with a focus on sustainability.

Sub-Saharan Africa, with a rapidly growing urban population and increasing incomes, is poised for significant investment opportunities, particularly in industrialization and infrastructure. FIMA leverages its expertise and EU finance mechanisms to support sustainable development in the region.



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www.fima-industries.com

www.fima.africa



Our global locations:

FIMA Industries GmbH
Landschastraße 32/2
8160 Landscha bei Weiz
Austria

FIMA Industries Germany GmbH
Landsberger Straße 155
80687 München
Germany

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