



# UPCYCLING WASTE FOR GOOD

2022 Annual Review





# SAFISANA IN 2022

**2022 was a year of renewal and forward momentum for Safisana.** Building on the significant improvements made in 2021 at our Ashaiman plant—with upgraded processes, new action plans, and technical input from partners such as FactorE, Biotval, Suez, Aquassistance and WRP—we were able to unlock the plant's full potential and step into a new phase of growth.

At the start of the year, we successfully restarted biogas and electricity production after nearly 11 months of downtime. By February and March, production was already exceeding our conversion capacity, highlighting both the resilience of our system and the need for a second CHP generator to manage energy more efficiently. Importantly, the surplus biogas has also opened the door to a promising business case—the Safisana Biogas Proposition—which represents **a pathway to scaling up gas production, reaching break-even in Ashaiman, and replicating the Safisana Solution across Ghana and beyond.**

In parallel, we strengthened our research and development activities, investing in projects to optimize operational parameters and codify lessons learned into a blueprint for future plants. This ensures that new facilities can be built and operated with even greater efficiency and impact.

Finally, we continued to invest in our people. With new key hires in both Ghana and the Holding, and a stronger focus on training, we are equipping our team with the skills and expertise needed to drive Safisana forward.

**Together, these achievements mark 2022 as a turning point—a year in which Safisana not only overcame operational challenges but also laid the foundation for long-term, scalable growth and deeper impact.**





# OPERATIONS

With the renovated digester, biogas production can now reach its full capacity and double from the current 1000m<sup>3</sup> to 2000m<sup>3</sup>. With support from the Vitol Foundation we were able to procure advanced equipment such as the second Combined Heat and Power (CHP) generator and a screw press to increase the gas and compost production capacity at the Ashaiman plant to scale up.

The second CHP will also allow us to reach the maximum amount of energy that is contractually allowed for us to sell to ECG (the grid). Currently, with only one CHP it is not possible for us to reach that amount. Secondly, it will mitigate our risks of not being operational, in case of breakdowns, and enable us to optimize our maintenance (level of stock, shipping of parts).

The second CHP was ordered at the start of 2022, but due to global supply chain issues the delivery time has now been pushed back to mid 2023. Because of this significant delay in the delivery, it has impacted our revenue generation. This, together with the unsatisfactory sales of our fertilizer, has meant we were unable to reach break even in 2022.

The screw press was installed in Q2 of 2022. The screw press will make the drying process of the wet digestate more efficient by separating the liquid fraction from the dry fraction much faster. The liquid fraction will make use of the existing drying beds and the dry fraction can be used for composting immediately. At the same time we expanded the composting area on-site through land reclamation which will double the production and increase our revenue. Currently we are producing more than 1250 bags of organic fertilizer per month, having gained more space. In combination with the use of the screw press we can ramp this number up to more than 2,400 bags per month.



## Compost sales

In 2022 Safisana received non-financial support from The Stone Family Foundation to engage sales consultancy firm [Whitten & Roy Partnerships](#) (WRP) to assist Safisana in hiring and bringing our sales to target. WRP outsourced a field coach who was embedded for a period of 3 months to train the newly appointed Sales Manager and the sales team on their sales skills and reviewing the compost sales strategy.

During that time, the Russia-Ukraine war started. Prices of inorganic fertilizers on the world market reached record high prices since the start of the year due to the price increase of oil and gas and the scarcity of raw materials needed for the production such as ammonia, nitrogen, nitrates – all of which are the main components of chemical fertilizer. Russia, which is one of the major fertilizer exporting countries, had to temporarily suspend outgoing trade since its invasion of Ukraine. Because of these events, organic fertilizer is now rapidly emerging as an affordable and competitive alternative to chemical fertilizer.





This shift does not exactly translate to the situation on the ground though. The interest in organic fertilizer may be high, but our experience has been that farmers are cash-strapped and cannot afford to buy fertilizer or any other agri inputs. Over the past couple of months, we have been working closely together with the Stone Family Foundation to adopt a different approach to sell our fertilizer. A marketing campaign has been developed, and some work has gone into rebranding the Asase Gyefo organic fertilizer.

The Sales team have made significant efforts in building the customer database, presenting at various conferences and agricultural fairs, setting up demo-plots at farmers and reaching out to NGOs and international organizations (e.g. Agriterria, SNV, Farmerline) that have agri programmes to assist smallholder farmers that contribute to food security in the communities.

From our experience, farmers are more likely to buy organic fertilizer once they've seen the actual benefit of it. We have therefore established demonstration plots where the organic compost can be applied and this is now used as an effective sales tool.

We expect to see an increase in sales in 2023 from 500 bags (currently) to 1200 bags per month (target) as we will expand our reach to other regions, and implement the above mentioned strategies.



**How it is produced**

We treat waste as a resource  
Asase Gyefo is produced by Safisana Ghana Ltd, a recycling company that treats organic and biodegradable waste from the local communities and turns it into valuable products such as fertilizer and biogas.

We reuse scarce nutrients  
Instead of mining them, scarce nutrients and minerals such as phosphorus are recovered from the organic matter through a nature-inspired process.

100% Safe and certified  
The result is a purely organic, and 100% safe and certified product that helps local farmers in the community to change towards cleaner and more sustainable food production.

**LESS COST, MORE YIELDS**

**asase gyefo**

**PREMIUM ORGANIC FERTILIZER**

Optimized for all types of crops and plants  
High organic content  
Rich in macro and micro-nutrients  
Long-term benefits on soil health and soil fertility

**ALL NUTRIENTS IN ONE BAG**

	Asase Gyefo	Chemical Fertilizer
Macro-nutrients	100%	100%
Micro-nutrients	100%	100%
Organic matter	100%	0%
Soil health	100%	0%

**Discover the benefits of Asase Gyefo**

Farmers across the world are currently facing challenges with the rising cost and availability of chemical fertilizers. Asase Gyefo Premium Organic Fertilizer is an affordable and cost-saving organic alternative with long-term benefits for the quality of the soil and produce.

Asase Gyefo is produced with care by Ghanaians and for the Ghanaian market. It is suitable for use in agriculture and horticulture, for all types of crops and plants, cultivated in greenhouses as well as in the open farm field.

Visit our website or come to Asase Gyefo South at [www.asasegyefo.com.gh](http://www.asasegyefo.com.gh)

**How to buy Asase Gyefo® Premium Organic Fertilizer?**

For more information, go to [www.asasegyefo.com.gh](http://www.asasegyefo.com.gh) or contact our sales team.  
Email: [sales@asasegyefo.com.gh](mailto:sales@asasegyefo.com.gh)  
Tel: 030 297 3280 or 0244 184 806

Sales pick-up point Safisana Ghana Ltd  
285 meters away from Tema Motorway underbridge, Adjai Kofi Ashiaman  
GPR coordinates: 6.63545, 0.14655

**Saves cost**  
Using Asase Gyefo saves cost. It is much cheaper than chemical fertilizer and you need less of it. After the first crop season, yields can increase by over 20 per cent.

**Highly nutritive**  
Asase Gyefo is highly nutritive containing all macro and micro-nutrients for plant growth in one bag, so no additional nutrients needed.

**Resist pests and diseases**  
Double amounts of potassium, nitrogen and phosphorus help plants resist pests and diseases and increase the shelf life of your produce.

**Fully organic and environmentally friendly**  
Asase Gyefo is fully organic and environmentally friendly. It supports sustainable farming with long-term benefits of improved soil health and fertility.

**Premium and PRRS-certified**  
Asase Gyefo is a premium and PRRS-certified product.



# RESEARCH AND INNOVATION

## FERTIGATION

In 2022 we started with a so-called fertigation (or landspreading) pilot. The goal of this fertigation pilot is to prove that liquid digestate coming from the digester can be used in agriculture and to find out how (what volumes, what additives are needed) it can have the best possible impact on yields. The land spreading pilot started in September with the newly recruited Research Agronomist and an engineer/compost expert consultant.

The first steps of the project was to design the experiment; to agree on the different parameters that would be tested, and how to monitor the project. The logistical aspect of the project (find a plot of land for testing, purchase the needed equipment etc) were also addressed. The planting of the crops was done in Week 47 of 2022, so we expect to receive the results of this project around Week 9 of 2023.

## Screw press

We have been testing various composting recipes, and the use of the screw press for composting. The screw press arrived in May in Ashaiman, and was fully installed in June. After several tests and involvement of different experts, we realized that the screw press was not adapting to the current digestate texture. The screw press was purchased when the content of the feeding was different, whereas in the meantime the characteristics of the digestate changed. The screw press would have worked better with the digestate we previously worked with, but less with the digestate we have now. The reason for the change of feed was that it optimizes the gas production and quality, and that it is better adapted to operate our digester on the long term (the previous feed was the reason why the digester broke down). Going back to the old feed is therefore not a preferred option.

Even though the screw press is currently not being used for its original purpose, it still allows us to have better control on the dewatering of the digestate, and will also help us to optimize the use of the space at the plant. The drying beds were not operating as expected, and therefore the drying time was longer than normal, which disrupts the compost production. The capacity of the beds is also not big enough to dry more digestate, so if we want to increase the amount of digestate to treat per day, we need another solution (either more beds or use of a screw press). The screw press, with the use of thickening agents, will allow us to reduce the number of beds, as its capacity is bigger than the amount of digestate we now have to dewater.



*Screw press which is placed between the digester and drying beds*



## COCOBOD registration

In order to supply organic fertilizer to cocoa farmers, which is a large market in Ghana, our product needs to be certified first by the Cocoa Research Institute Ghana (CRIG) in order for it to be recognized by the Cocoa Board of Ghana (COCOBOD). The duration of the certification process takes about 3 years, hence we were advised to start with the certification of the cocoa seedlings first which takes about 6 months. Once our product is certified to be applied on seedlings, it will give us a start to work together with COCOBOD and cocoa farmers.





# SCALING

## Safisana waste recycling plant in Kumasi

In 2022 we completed a study to determine the critical conditions to start a pilot scale plant for compost production. Recently we set-up a composting production plant at the Oti Landfill in Kumasi where Clean Team (a container based sanitation provider) is already established. Safisana hired a team of waste collectors, compost producers and a supervisor who will work together with Clean Team to turn their waste mixed with organic waste from the food markets into Asase Gyefo compost.

By January 2023 we expect to have more visibility on the required elements to formulate the pilot framework. We can then also further assess and consolidate Safisana's sourcing streams (organic waste and faecal sludge).

The pilot will further be used to investigate whether the plant can be extended to a biogas and electricity gas production plant to provide green energy to companies like the Kumasi abattoir and other local industries. During this initial phase Safisana is liaising with local authorities and financial partners to secure the eventual feasibility and economic viability of the project. Compost production at the Safisana recycling plant in Kumasi is progressing and making the needed impact; socially, economically and environmentally.

In partnership with Clean Team Ghana and Kumasi Metropolitan Assembly, the project which at its base has its primary objective of ensuring source separation of waste at the markets in the central business district of the city and adding value to it through composting. We started operations in October 2022 and so far we have treated over 700 tonnes of waste.







# BUSINESS DEVELOPMENT PROJECTS

## Compressed gas

Safisana is developing a mobile gas solution for industries who aim to have zero emission operations and want to transition to renewable energy. The Safisana Biogas Proposition provides a solution for the growing demand amongst industries for clean and renewable energy sources as an attractive alternative to scarce and expensive fossil fuels. The Safisana Biogas Proposition also allows Safisana to scale up its gas production significantly in Ghana - a key success factor for reaching break-even with operations in Ashaiman and for successfully replicating the Safisana Solution elsewhere.

A few of the main challenges in scaling the gas production is the current dependency on supplying electricity to the power grid (in Ashaiman) and the scarce availability of land on strategic locations to build new plants. Ideally new biogas plants would be built next-door to a biogas off-taker, with a simple infrastructure to deliver the biogas. But this is often not possible or economically viable. That is why Safisana is developing an affordable mobile biogas solution based on bottling and transportation of biogas.

A leading global food and beverage company, with a chocolate factory near Ashaiman, is exploring the economic viability of sourcing biogas from Safisana. In the feasibility study we are working with [Powercrumbs](#) (Dutch supplier of equipment for compression of our biogas) to assess the compatibility of the company's systems. Once this is completed, we will determine and request for the necessary permits and do an Environmental and Social Impact Assessment (ESIA) study; work on the purchase agreement (biogas supply contract); and do the preliminary design work on the (new) layouts for the respective plants.

## Ethiopia

In Q4 2021, Safisana engaged Dutch consultancy firm [Resilience](#) to conduct a quickscan on the potential for sourcing faecal sludge and organic waste in Addis Ababa. The study identified several promising leads, including a potential collaboration with the [Addis Ababa Water and Sewage Authority \(AAWSA\)](#), which is responsible for waste collection and treatment. These findings point toward the opportunity to build a strong circular model that integrates multiple stakeholders and delivers significant impact.

A pre-feasibility study has since been initiated to explore under what conditions such collaborations can move forward, with financial support secured to carry out this work. The model under development would combine organic waste and faecal matter treatment with the generation of biogas and electricity, while also exploring how by-products—such as nutrient-rich organic fertilizer and liquid treated digestate—can be supplied to local farmers, boosting soil health and agricultural productivity.

While progress has taken longer than initially anticipated, this reflects the seriousness with which potential partners are engaging. Discussions are no longer confined to the local level but have been elevated to headquarters, a positive sign that the business case is being considered strategically. This careful, multi-stakeholder approach strengthens the foundation for building a scalable, high-impact circular economy model in Addis Ababa.

## Pipeline projects

- **A mining company has** reached out to Safisana to conduct a scope to reclaim land and enrich it with faecal sludge to make it fertile for agricultural activities. With all mining activities, there is a legal requirement for the company to make good the land which could align well with Safisana's fertigation work. Discussions are ongoing for 2023.
- **Uganda - Kampala.** The focus of this study has been on the business case in partnership with National Water and Sewerage Company/Kampala Capital City Authority, with special focus on sourcing of organic waste and the production of biogas. This project is an add-on to the ongoing project. We want to understand and design the business case for compost. The study is split into two stages where each stage focuses on a different target group:
  - the local (international) industries as buyer of the compost for the nurseries / commercial farm and with a special interest in sourcing of their waste and a spin-off effect on the companies' SDGs (phase 1 of the study);
  - the farmer market (phase 2).





## Strengthening the Teams

As more business development projects are coming Safisana's way, the production of biogas and compost are increasing and the expansion plans to Kumasi have become a reality, we also need the human resources to share the workload with. In 2022 we've welcomed a sales manager, sales assistant, research agronomist, HR assistant to our teams. This is in addition to the start of a core team in Kumasi.



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