

Scaling Out For Impact (SOFI) UK and SA SMME Cohort Profiles

UK SMMEs

SERGEY MIKHALOVSKY

R&D Director

ANAMAD Ltd



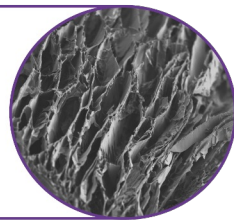
SECTOR/S

Water – Energy - Food

COUNTRY

United Kingdom

ANAMAD



SOCIAL MEDIA HANDLES

www.anamad.co.uk

PERSONAL PROFILE

R&D Director and co-founder of Advanced Nanostructured Materials Design and Consultancy Limited (ANAMAD Ltd). Professor of Materials Chemistry (in my academic life). PhD, Fellow of the Royal Society of Chemistry, Chartered Chemist.

Area of expertise: physical chemistry, sorption and catalysis, environmental and chemical engineering, environmental pollution prevention, water and wastewater treatment.

Experience in international and national projects management and coordination. Projects funded by the European Commission, UK (Innovate UK, Royal Society, Royal Academy of Engineering, EPSRC and MRC). Research expert of the Innovate UK, Horizon-Europe, EPSRC, national funding agencies.

COMPANY DESCRIPTION

ANAMAD was founded in 2018, by two academics, Dr Matthew Illsley, Managing Director, and Prof. Sergey Mikhalovsky. Main activities are in R&D: Design and development of technologies for water treatment, remote monitoring of radioactivity, analysis of environmental contamination, adsorbents for environmental and medical applications; and Consultancy: training in transferable skills, preparation for pre-clinical and clinical trials of biomaterials and medical devices; proposal writing.

INNOVATION PROFILE

We develop an innovative technology for removing persistent and emerging pollutants from all water sources. Current water treatments are often expensive or ineffective, require highly trained users, and often have long supply chains. Our device is “lightning in water”. It destroys and removes all organics and microorganisms. Energy is the only consumable. No extra chemicals are added, nothing else is needed.

How does it work? An electric discharge shot through water generates high energy particles and chemical species, which break down pollutants, bacteria and viruses. The benefits are low operational costs, it is fire and forget, and it is supply chain-free. The technology has been successfully tested at the laboratory proof-of-concept stage funded by Ofwat - the UK Water Services Regulation Authority. Currently ANAMAD is at the prototype demonstrator stage funded by Ofwat, as one of the winners of the Water Discovery Challenge Phase 2 competition.

RINKU DASBISWAS

Co-Founder

Aqsen Innovations



SECTOR/S

Water – Energy - Food

COUNTRY

United Kingdom



Aqsen Innovations
Tech for societal impact

SOCIAL MEDIA HANDLES

www.aqua-sense.co.uk
<https://www.linkedin.com/in/rinku-dasbiswas-594b53a/>

PERSONAL PROFILE

As an engineer and social entrepreneur my passion is to create affordable and appropriate technology led solutions with high societal impact. With this intent, I co-founded Aqsen Innovations Ltd. in 2019 to address clean water challenges in developing nations. I am experienced in user engagement with remote rural communities, assessing needs and identifying operational gaps. I am good with local collaborative partnerships involving government, academia, research, and commercial enterprises. My projects involved extensive travel to Asia / Africa to conduct detailed surveys and trials around tech feasibility and commercial viability. I can define and develop prototypes and deliver proof of concept demos with a human centric approach. I have conducted several workshops/FGDs to educate the marginalised communities. Have strong background of working with cross functional teams. Joy of travelling, exploring new regions, training and empowering excites me!

COMPANY DESCRIPTION

Aqsen Innovations since its inception in 2019 has focussed on its innovation Aqua- Sense a real time water quality monitoring solution, conceptualised in rural India for community drinking water, funded by GCRF Innovate UK 2020. Subsequently, in partnership with an EO company in Scotland and funded by European Space Agency 2022, the Aqua-sense prototype was successfully trial tested in Lake Victoria, Uganda to explore sensor-satellite synergy in large scale environment monitoring. In 2023 we won the GCRF Agrifood Africa catalyst award to establish how Aquasense can reduce mortalities, improve yield, and contribute to food security in African economies relying on aquaculture. We also secured part funding from World bank (IFC) for piloting our innovation in Kenya at MUWASCO water plant; sadly, halted by Covid in 2020. Our innovation was demonstrated at the Africa Water Congress 2020 in Kampala and was duly recognised.

INNOVATION PROFILE

Aqua-Sense is a real time detect, monitor, prevent solution for dynamic water quality monitoring, providing actionable insights to curb mortalities and reduce losses due to water contamination across various sectors. It can improve yield in aquaculture by optimising feeding decisions that directly impact farm costs and profitability. Instant alert notifications when parameters cross safe values aid faster remediation. As a remote management solution, it reduces human dependencies and room for error. By replacing expensive hardware-based intelligence with a centralised IoT device management platform, the solution becomes affordable. The user- interfaces allow vivid visuals easy to understand and interpret. Sensor-satellite synergies can be further explored for predictive modelling of harmful algal blooms and environment monitoring of lakes and rivers.

SIMON HOLLAND

CEO

Barefoot Lightning Ltd



SECTOR/S

Water – Energy - **Food**

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

www.barefootlightning.com

PERSONAL PROFILE

I've had a career that has spanned Strategy Consulting in Telecom and Media, right through to working in technology for development for 20 years across Latin America, Africa and India, where I lived for 8.5 years. I have a PhD in Quantum Mechanics which has been useful in understanding how we could integrate AI and machine learning (ML) into our platforms. In 2007 I developed the National Pest & Disease Surveillance System for India, leading a team of over 40 research and extension agencies. Co-opted to the sub-committee for IT in Agriculture Marketing for the 11th 5 year plan for the Govt. of India.

COMPANY DESCRIPTION

Barefoot Lightning was formed in 2013 to harness the power of technology, science and nature to impact the lives and livelihoods of smallholder farmers across the Global South. From beginnings in crop and soil regenerative agriculture we quickly began to understand the importance of livestock to our farmers, to feed the soil as well as diversify income and act as an asset in times of need. Seeing a gap in the market, we began to work with leading research institutes such as Liverpool University Vet School and The International Livestock Research Institute (ILRI) Kenya to develop livestock solutions. Our work has been recognised by The Bill & Melinda Gates Foundation & The Global Challenges Research Fund, as well as being supported by NPL & The Newton Gateway to Mathematics to develop ML algorithms.

INNOVATION PROFILE

Our Animal Health Platform uses local language animations to support farmers to identify symptoms and share these with vets, who are supported in their diagnoses & treatment plans via a ML probability model. The Feed and Nutrition Platform supports development of nutritionally balanced, least-cost feed recipes optimised for Carbon Footprint, with traceability and access to Carbon Credits to encourage uptake. Our finance and risk assessment tools allow lenders to assess both financial and delivery risk for livestock and value addition projects, providing access to finance to previously unbanked individuals & groups.

MAX WYLLIE

CMO / Project
Manager

Botanic Energy



SECTOR/S

Water - **Energy** – Food

COUNTRY

United Kingdom



WEBSITE

<https://botanicenergy.co.uk>

PERSONAL PROFILE

Max is a Marketing, Communications and Systems specialist responsible for Botanic Energy's communications and marketing strategy. As one of the company's project managers, Max is involved in both private funded and granted projects and general business development. With a background as Creative Director and Founder of a production company based in the UK and Germany, Max has worked extensively within the fields of corporate, commercial, documentary and film. Previously leading projects for global charities, international corporates and events.

COMPANY DESCRIPTION

Botanic Energy's patented thermoelectric Matrix makes heating, cooling and refrigeration perform better, cost less and be more sustainable. This aligns with Botanic's low and zero emissions thermal innovations targeted at clean energy generation, built environment, transport (temperature controlled distribution / last mile delivery) and agritech (controlled environmental agriculture). Our solid state, low-energy, high output heat transfer system offers an energy-efficient alternative to vapour compression cooling/refrigeration, HVAC systems and fossil-fuelled boilers, performing at high coefficients of performance (tested and validated with Oxford University) with low emissions, clean when linked to renewables such as solar. Botanic has received several innovation grants and purchase orders for its core heat transfer Botanic Matrix® for system integration in multiple supply chain applications.

INNOVATION PROFILE

Botanic Energy is developing a clean solar generator with multiple applications, incorporating many traditionally separate systems into a single combined energy-efficient unit. Powered by renewable energy with surplus energy storage for 24/7 operation, the zero emissions system will reduce up-front and operating costs and wastage of food and medicines. With the ability to auto-switch between on-grid or renewable solar, systems run simultaneous applications such as heating for cooking/hot water, cold-storage and ancillary power. Solid state (without moving parts), these energy-efficient thermoelectric systems avoid many heavy components of traditional generators, producing lightweight portable equipment without refrigerants, that can be maintained locally.

DIARMAID MAC COLGÁIN

Founder

Concept Dairy



SECTOR/S

Water - Energy - Food

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES



www.conceptdairy.com

PERSONAL PROFILE

Diarmaid launched his career as a Commodities Trader, specialising in oil, gas, and electricity markets. Headhunted to Ornuá Co-Operative (Kerrygold, Pilgrims Choice, Tesco & Sainsburys own label cheeses etc.), he became Head of Trading, overseeing Kerrygold butter and Ireland's largest dairy trading company. Recognising a flaw in the dairy supply chain—lack of price transparency and technology support—Diarmaid, with over 18 years of trading experience, founded Concept Dairy. The innovative solution empowers dairy farmers, processors, and buyers, offering price transparency and control over core inputs. Passionate about sustainability, Diarmaid strives to create a more secure and transparent dairy sector, ensuring farmers are no longer mere price-takers for a more sustainable dairy sector.

COMPANY DESCRIPTION

Concept Dairy uses innovative technology-led solutions to create price transparency across the dairy supply chain. The Concept Dairy Farmer App gives farmers live, accurate prices milk prices that update daily. Farmers can lock-in their milk price when they choose for up to two years into the future giving price security and economic sustainability. Our Risk Management Platform supports Processors to understand and manage their risk; and we support buyers/retailers to lock-in their margin and guarantee security of supply while improving product traceability from farm to fork. With price transparency across the supply chain we support farmers, processors and buyers to achieve fair prices, creating a more sustainable dairy sector. Everyone in dairy benefits from Concept Dairy

INNOVATION PROFILE

We have two projects:

- 1) Helping South African dairy farmers to get a better price for their milk using a technology-based solution focused on price transparency and price control
- 2) Helping South African dairy farmers control the cost of essential inputs: feed, fuel and fertiliser, using a technology-based approach.

DANIEL PASCUAL

Microwave Remote
Sensing Eng.

Deimos Space UK
Ltd.



SECTOR/S

Water - Energy - Food

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

<https://www.linkedin.com/company/deimos-space-uk-limited>

PERSONAL PROFILE

Daniel Pascual (Ph. D.) is a microwave remote sensing engineer involved in Earth observation science projects in the domains of oceanography, land surface and hydrology. He is a project manager of several projects with the European Space Agency and a member of the science team of the NASA CYGNSS mission for cyclone winds retrieval.

The geophysical variables in which he has experience and that are relevant to this workshop are soil moisture for drought monitoring, land surface temperature for fire susceptibility mapping, above-ground biomass for forest productivity, and river flooding monitoring.

COMPANY DESCRIPTION

Deimos Space UK has 30 employees providing expertise and solutions based on space technologies. Since 2015, the company has pioneered the development of applications based on Artificial Intelligence and satellite imagery for precision agriculture, forestry, renewable energy and maritime applications. As a space technology provider, the company works with partners to develop solutions for each specific market and is looking for partners in South Africa to help them develop their own solutions tailored to their needs. Deimos Space UK has developed monitoring solutions with partners in Guatemala (forestry), Mongolia and Kyrgyzstan (pasture), Ethiopia (agriculture), Spain (solar farms).

INNOVATION PROFILE

In Deimos' portfolio of solutions, two have been identified with the potential to address some needs. Food: Earth Observation services are available in Deimos cloud platform to monitor crop health, soil moisture, predict yield, detect anomalies and improve crops in general. A mobile application is available to monitor individual fields and help agronomists and farmers generate application maps for fertilisers.

Solar farm: Fast and simple drone solution to inspect solar panels and detect defects, for extremely small and extremely large installations.

SERGIO CARDAMAS

Managing Director

dpSun



SECTOR/S

Water - **Energy** - Food

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

 www.dpsun.com

PERSONAL PROFILE

Sergio brings over 15 years of expertise in the renewable energy sector. He has effectively led research and development projects focusing on rural electrification, innovative PV/T and BIPV products, and their design and development. Presently, Sergio is the project leader for a grid stabilization initiative in Samoa. Additionally, he will be heading the SPARC Project in Nigeria, supported by Innovate UK. Sergio has a Business degree and an MBA, and has twice taken part in the Ignite Programme at the University of Cambridge.

COMPANY DESCRIPTION

Established in 2014, dpSun focuses on research and development in various such as sustainable off-grid electrification, Grid stabilisation and Battery Energy Storage Systems with a special emphasis in regions like Africa and the Asia-Pacific. Till date dpSun has been the winner of 5 Innovate UK projects with a total project budget of more than £2 million with projects in countries such as Botswana and Nigeria among others.

INNOVATION PROFILE

Sustainable Solar electrification - dpSun has projects related to implementation of off-grid electrification, solar mini grids in Africa & Pacific namely Botswana, Nigeria & PNG. The social innovation is based on business and community model comprising positive impact across multiple domains.

Energy Storage Systems - Through Project AIRFUSE, dpSun along with its partners is implementing a long-duration energy storage system backed by All Iron Redox Flow Battery technology which is innovative, low-carbon and secure and overcomes problems related to small storage capacity, environmental toxicity, high cost and explosion risk, reducing CO2 emissions and better grid resiliency.

DR. MUHAMMAD SHAHZAD

CEO

EcoTechX



SECTOR/S

Water - Energy - Food

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

<https://ecotechx.com/>

PERSONAL PROFILE

Dr. Shahzad is Founder and CEO of EcoTechX Limited and a Professor of Sustainable Solutions at Northumbria University. He is also a Royal Academy of Engineering Fellow at Northumbria University. He had PhD in Mechanical Engineering from National University of Singapore. He has over 10 years experience in water treatment and water generation solutions development operating with solar energy.

He has received number of international awards including Global Innovation Award 2020 and The Institution of Engineering UK Excellence & Innovation Award 2023. He is a Chartered Engineer, Chair of The Institution of Mechanical Engineers (IMechE UK) regional committee and Chair of IMechE chartered engineer interview panel.

He has received number of grants from British Council, Royal Society, Royal Academy of Engineering, EPSRC, FCDO and Innovate UK. He also sit on panels of number of funding agencies.

COMPANY DESCRIPTION

EcoTechX Limited was established in 2023 to seek innovations for water generation processes. Founder and CEO, Dr. Shahzad, received extensive entrepreneur lead training through Innovate UK Innovation-to-Commercialisation of University Research (ICURe) programme and EcoTechX was proposed by ICURe panel. EcoTechX received Innovate UK seed funding to develop minimum viable product and prepare commercialization plan.

Solar2Water can produce water for remote communities, refugees camps, field hospitals, schools, offices and disaster locations using solar energy. It is a plug and play modular system with minimum requirement of maintenance and operational experience requirements.

INNOVATION PROFILE

Solar2Water is an innovative technology to produce water from ambient air using solar energy. As compared to other atmospheric water generation processed, Solar2Water can produce stable amount of water irrespective of outside humidity due to novel AI/ML control. More detail of Solar2Water can be found here:

<https://www.northumbria.ac.uk/about-us/news-events/news/new-portable-system-produces-drinking-water-from-just-air-and-sunlight/>

<https://www.pv-magazine.com/2023/06/08/new-portable-system-uses-pv-to-produce-drinkable-water-from-air-moisture/>

BETTY BONNARDEL

CEO

Farmer Charlie



SECTOR/S

Energy – Food - Water

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

www.farmer-Charlie.com

PERSONAL PROFILE

Betty is CEO and Founder of Farmer Charlie, an a la carte infrastructure platform for remote farming. An award-winning Fellow and Chartered engineer, Betty is recipient of a British MBE. She uses her experience and skills in telecoms, tech and innovation, business and strategy towards bringing a complete hardware and software system of IoT, telecoms and solar energy. She holds two Masters' in Science in aeronautical and space engineering, and a MBA. Betty is a certified project manager.

COMPANY DESCRIPTION

Farmer Charlie is an optimised infrastructure platform providing power, connectivity to support the food production. Through the deployment of technology and its integration, Farmer Charlie brings solar panels, internet sensors and software to remote farming to support the efficient use of resources, the digitalisation of farming and access to agribusiness opportunities. In a recent case, Farmer Charlie's system approach saved 40% of waste for a mango cooperative in Cote d'Ivoire.

INNOVATION PROFILE

Through our optimised integration of both energy and internet connectivity, hardware and software, we are able to deploy infrastructure at an economic cost. We have developed our own economic sensors, to optimise the use of this infrastructure and support farming. Our unique sensor technology can be adapted to outdoor and indoor use, farming, food chain, energy, water needs, they are long life and have different communication modes making them everywhere.

THOMAS STRINGER

CFO

Flybox



SECTOR/S

Water – Energy - Food

COUNTRY

United Kingdom

The Flybox logo is displayed on a yellow rectangular background. The logo consists of the word "FLYBOX" in a bold, black, sans-serif font, with a registered trademark symbol (®) to the upper right of the "X".

FLYBOX®

SOCIAL MEDIA HANDLES

www.flybox.bio

PERSONAL PROFILE <<Project Lead / Representative attending April Workshop>>

Thomas is a corporate financier and private equity professional, with nearly a decade's experience in the sector. He has underwritten in excess of £1.0bn worth of deals, and led the transactions on c.£500m of them, in sectors across asset management, healthcare, commercial and residential. Thomas studied Natural Sciences at the University of East Anglia, including environmental and climate science. He is also a CFA Charterholder, and experienced project manager.

COMPANY DESCRIPTION

Flybox is a modular insect farming technology company, offering the world's first end-to-end modular insect farms. Flybox farms the Black Soldier Fly (BSF) for primary applications in animal feed and pet food. BSF larvae bio-convert a wide range of organic waste into high quality protein and lipids (insect meal), and produce a co-product - frass, a biofertiliser.

INNOVATION PROFILE

FlyBox turns organic waste, including wastewater sludge, into valuable resources – protein for animal feed and biofertiliser for crops. We foresee a partnership that would benefit both the water and food sectors in South Africa, by providing a sustainable, cost-effective solution to waste management and nutrient recovery.

PHILIP DUGGAN

Director

Micrea



SECTOR/S

Water - Energy - Food

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

Micrea.co.uk, [Linkedin.com/Micrea](https://www.linkedin.com/company/micrea)

PERSONAL PROFILE

Philip Duggan is an entrepreneur with a strong focus on sustainability, stemming from a lifelong interest in biology and a master's degree in biotechnology. His career began with a deep dive into the circular economy, leading to significant contributions in bio-based materials and waste-to-energy systems. This path culminated in founding Micrea, a company dedicated to creating sustainable solutions by transforming waste into resources, thereby promoting a closed-loop industry model. Philip is known for his innovative approach to environmental challenges, his emphasis on collaboration to achieve sustainable goals, and his resilience in facing obstacles, viewing them as opportunities for growth and improvement.

COMPANY DESCRIPTION

Micrea is an innovative microwave research company focussed on extracting protein from plants, simultaneously addressing net-zero goals and contributing to environmental sustainability. The residual biomass from this extraction process is transformed into biochar, which is then processed into "green coal." This innovation is key to Micrea's mission of providing affordable, clean cooking stoves across Africa, aiming to replace traditional biomass fuels with a cleaner, more sustainable energy source. This approach not only mitigates environmental degradation but also improves health conditions by reducing indoor air pollution, embodying a comprehensive solution that marries technological advancement with ecological and social benefits

INNOVATION PROFILE

Micrea is at the forefront of sustainable innovation, leveraging unique low-energy microwave technology to harness plant protein and transform biomass into green energy and advanced materials like graphene. Our process efficiently produces clean "green coal" for affordable cooking solutions in Africa and beyond, while also offering high-quality plant protein to meet global demands. With services spanning processing, equipment sales, and eco-friendly products, Micrea is dedicated to advancing a circular economy, reducing waste, and making a positive environmental impact worldwide. Join us in shaping a sustainable future through groundbreaking technology that benefits both the planet and its people.

DARPAN PRADHAN

Growth Lead

OrxaGrid



SECTOR/S

Water - **Energy** - Food

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

 [@orxagri](#) www.orxagrid.com  [orxagri](#)

MEET OUR REPRESENTATIVE

- Representative for OrxaGrid's expansion into South Africa.
- Driven by our Indian achievements to tackle South Africa's energy demand and efficiency.
- Seeking dialogue with local authorities, utilities, and green energy enterprises for tech adoption.
- MBA in Materials & Production Management, BE in Electrical Engineering.
- Over 12 years in the electrical industry, with a background in Key Account Management and collaboration with contractors, consultants, and clients.

COMPANY DESCRIPTION

OrxaGrid makes electricity more reliable with our patented IoT technology, tracking and improving key assets like transformers and feeders. We help energy companies reduce outages, reduce losses and produce fewer emissions. Our tools include smart analytics for managing energy better, new methods for updating old infrastructure, and an easy-to-use app to pick the best green technologies.

INNOVATION PROFILE

We support electricity distribution utilities and large energy users, such as industry complexes and municipal localities, by helping them cut costs and use energy more efficiently. Our technology is crucial in regions needing better energy management.

We're looking to partner with South African experts in electricity grid assets to boost power reliability in regions plagued by frequent outages, pre-emptively tackling issues to prevent disruptions.

DC MABVARO

Founder

PaMusoro



SECTOR/S

Water - Energy - Food

COUNTRY

United Kingdom

SOCIAL MEDIA HANDLES

www.pamusoro.com
www.descha.xyz

PERSONAL PROFILE

Aloah! My name is Dzikamai Charles Mabvaro, but don't worry about the first part – even my dentist struggles. So, call me “DC”! By day, I'm a full-time Uber driver for my insanely energetic 8-year-old. School, sports, social engagements – it's like chaperoning a rockstar in training! But when I'm not dodging rogue soccer balls, I'm channelling my inner “eco-warrior”. That's why I founded PaMusoro, on a mission to ensure we can all cruise towards a cleaner future, both on the road and on our dinner plates!”

COMPANY DESCRIPTION

PaMusoro's mission is fuelled by the UN's vision: clean cities and zero hunger. Our Descha brand electrifies underserved areas in the UK, making clean cars a possibility for all. But our impact goes beyond borders. Inspired by our founder's connection to Africa, we partnered with BioAge, a bio-fertilizer innovator, to empower African communities. “Ubuntu”, a philosophy of shared humanity, guides us.

We believe that together, we can create a sustainable future where everyone thrives.

INNOVATION PROFILE

Driven by our "Ubuntu" philosophy, PaMusoro is spearheading a proposed project entitled "Empowering Mpumalanga Farmers". This proposed collaborative effort, will see us partnering with BioAge and local stakeholders like the Mpumalanga Department of Agriculture (MDA) and the Agricultural Research Council (ARC), seeking SOFI-2's support to tackle food insecurity and promote sustainable agriculture in Mpumalanga, South Africa.

SIMON IGHOFOSE

Co-founder/CEO

PyroGenesis LTD



SECTOR/S

Water - Energy - Food

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

PERSONAL PROFILE

Simon is co-founder and CEO of PyroGenesis and co-inventor of the patented PYROCHEMISTRY™ pyrolysis technology. Simon leads several international consortia to develop PYROCHEMISTRY™ as a Carbon Removal and Energy Access technology in markets across Europe, Sub Saharan Africa & Southeast Asia.

After a career in Local Government Economic Regeneration, where he was appointed as the first Voluntary Director of Leicester City Council (UK), Simon trained as a Chemical Engineer specializing in biomass pyrolysis, bioenergy & biofuel production.

COMPANY DESCRIPTION

PyroGenesis develops Carbon-negative Circular Economy solutions that deliver Value Addition and Carbon Removal.

The company is on a global mission to decarbonise industry by transforming bio-waste into valuable carbon-negative resources, leveraging our patented PYROCHEMISTRY™ pyrolysis technology.

INNOVATION PROFILE



South Africa Is Warming At Twice The Global Rate*

PYROCHEMISTRY™ will make South African agriculture & food production more resilient to **Climate Change** by:

a) Reducing post harvest losses - using **Renewable**

b) Increasing drought resistance - using **Biochar**.

Photo: freepik.com

*Greenpeace

TIM CANTLE-JONES

Managing Director

Smart Grid
Controls



SECTOR/S

Water - Energy - Food

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

<https://www.smartgridcontrols.net>
<https://smartgridsa.com>

PERSONAL PROFILE

Tim is a dynamic and successful social entrepreneur who over the last 30 years has worked in the UK and South Africa, across the public, voluntary and private sectors to make a difference. In 1997 Tim was recruited by the Government to lead the UK's Millennium Celebrations. Over a ten year period from 1997-2007, Tim worked for the UK government in key roles in sport, tourism and economic development. In 2007 Tim made the transition to the energy sector and subsequently has led business' in LED lighting, energy retail, smart metering and carbon reduction.

COMPANY DESCRIPTION

Smart Grid Controls was founded in 2018 on the back of over a decade of work by Tim Cantle- Jones and Technology Director, Steve Todd in the energy sector. The vision of the business is to maximise commercial benefit from changing energy markets in the UK and Sub-Saharan Africa. The business has a deep commitment and passion to help governments and business move towards a carbon free world. Our technology focus is the control and management of solar PV and energy storage.

INNOVATION PROFILE

Innovation Profile-Smart Grid Controls specialise in developing management and control systems for energy storage and solar PV. Specifically in relation to rural communities in South Africa we are developing a mobile storage offer, which will provide support to rural households which do not have access to or cannot afford grid electricity. A feasibility study for this project has been funded by Innovate UK, project partners for this study are Kings College London, University of Pretoria and RC Sol, a South African solar and battery installer. In looking at applications for mobile energy storage we are particularly interested in developing a packaged system which supports off grid cooking and refrigeration, so families are able to provide regular cooked meals and minimise food waste.

ALISTAIR VON GLEHN

Manager

SovTech



SECTOR/S

Water - Energy - Food

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

www.sovtech.com

PERSONAL PROFILE

Alistair has been at SovTech for over 3 years, moving from an Account Executive position and now works as a Partnerships Manager targeting our International Markets. He has been involved in a number of key strategies and initiatives to drive business and partnership growth.

COMPANY DESCRIPTION

Trusted by 400+ companies, SovTech helps businesses scale with our cloud-based engineering subscription platform, offering consistent, cost-effective software development, expert teams and reliable developer analytics.

INNOVATION PROFILE

A Custom software company that has built platforms across multiple industries and at different stages of the companies development.

- Afgri - AirBnB for farm equipment rentals
- Design for Aerobotics - improved crop yields
- Sustainability tracking for ethically sourced coffee + diamonds on the blockchain (TopI)
- Impact of Carbon credit projects with Imperative

JOSEPHOUS MICULOB

Project Lead

Tecrea Ltd



SECTOR/S

Water – Energy - **Food**

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

www.tecrea.com

PERSONAL PROFILE

Josephous Miculob (Joe) is a Senior R&D Scientist and Project Lead at Tecrea Ltd. His background is in nanotechnology and molecular microbiology. He is leading R&D projects involved in infection control and nanodelivery at various stages of development with partners worldwide.

COMPANY DESCRIPTION

Tecrea is a pioneering biotech company located in the London Bioscience Innovation Centre. Our mission is to empower researchers in life sciences through innovative nanotechnology. By creating a patented nanotechnology platform, we offer a unique range of cell and tissue delivery tools that are fully translatable from the lab to the field.

Our science revolves around Nanocin, a platform for the delivery of small molecules, protein, nucleotides. The Nanocin platform allows you to develop more effective research and potential future solutions for a wide variety of applications, from healthcare to agriculture. Collaborating with academic, biotechnology, and pharmaceutical partners, Tecrea is advancing the field of nanodelivery and infection control worldwide.

INNOVATION PROFILE

Nanocin is a versatile platform, allowing for the delivery of a wide variety of actives. As a potent antimicrobial, Nanocin is also a potential replacement for antibiotics and antifungals as it has no known resistance mechanisms. Currently, Nanocin is being developed for use in treating mastitis and endometritis in dairy and production cattle.

Tecrea's Sanzone seed coating technology is built on our Nanocin platform. It allows for efficient seed decontamination and protection with no negative impacts to seed germination. The Sanzone seed generation kit is perfect for small holder farmers in rural areas as it is safe, non-toxic, easy to use, and cheaper than alternatives. Its flexibility allow it to be used across a spectrum of seed types including maize, wheat, soya bean and millet. Designed to be compatible with existing local practices, Sanzone allows small holder farmers to be self-sufficient and resilient for sustainable farming.

TAPIWA GAVAZA

Chief Executive
Officer

Water Offsets Ltd



SECTOR/S

Water – Energy - Food

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

www.wateroffsets.co.uk

PERSONAL PROFILE

My passion with water straddles many decades from the time whilst I was still in University winning water competitions to address water issues in Southern African countries, to designing drip irrigation systems, windmills, boreholes and greywater recycling systems for my 10,000-student university. My MSc project at the University of Herts was based on delivering water efficiency in the hospitality sector through efficient fittings, greywater recycling and offsite blackwater treatment.

Currently, we are leading the Water Neutrality projects for more than 3,000 homes, and this is just the beginning.

COMPANY DESCRIPTION

Our mission is to preserve every precious drop of water, creating water-resilient communities, companies, cities and countries. Water Offsets is a vertically integrated WaterTECH company working to deliver water-resilient communities and governments. Many cities are experiencing rapid urbanisation, floods, and droughts due to climate change, which results in poor water supply and sanitation issues. We work with governments, regulators, and the private sector to deliver ESG, Water Neutrality, and Water Resilience policies and projects. We have been appointed by the UK government on a £200 million project to formulate research and advise on future water policy. Our HQ is in the United Kingdom.

INNOVATION PROFILE

Through innovation and technology, we ensure that brownfield, greenfield, and strategic sites achieve water neutrality. Our approach is based on the following protocol:

Step 1 - Innovative water supply design.

Step 2 - Reduce water demand by 45% to 50% on new development.

Step 3 - Offset water on existing developments which could be housing associations, schools, or care homes, registered on our database the WaterBank.

THOMAS CROMIE

Technical Director

x10NI Ltd



SECTOR/S

Water - Energy - Food

COUNTRY

United Kingdom



SOCIAL MEDIA HANDLES

[x10NI Ltd LinkedIn](#)

PERSONAL PROFILE

Thomas Cromie brings two decades of proficiency in the Anaerobic Digestion (AD) sector. Thomas has wide sectoral experience, and his knowledge extends to nutrient management and biogenic CCUS, key aspects of the AGRISMART project. He is also a significant player in shaping renewable energy policy and spearheading industry-led research and innovation. His leadership roles include board memberships in both the Centre for Advanced Sustainable Energy (CASE) and the Bryden Centre, where he represents the industry's interests and perspectives.

COMPANY DESCRIPTION

X10NI Ltd. is a forward-thinking company that specialises in integrating advanced technologies such as AI and machine learning into practical solutions for the agricultural sector. With a strong focus on innovation and sustainability, X10NI is dedicated to developing systems that enhance efficiency, reduce environmental impact, and promote sustainable practices within the industry. Their leadership in the AGRISMART project underscores their commitment to leveraging cutting-edge technology to address critical challenges in agriculture.

INNOVATION PROFILE

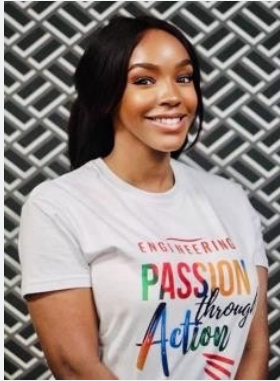
The AGRISMART project, funded by £924k from the UK Government's UKRI Bridge AI Fund, utilises advanced AI and machine learning to revolutionise sustainable agriculture, focusing on optimising resource management and enhancing environmental stewardship. This initiative aligns with the UK's commitment to innovative AI applications in key sectors, emphasising the transformation of livestock farming into a sustainable, carbon and nutrient neutral sector by negating the environmental impacts of the sector.

SA SMMEs

CAROLINE MATENCHI

CEO

AGR-Smart Tech



SECTOR/S

Water – Energy - **Food**

COUNTRY

South Africa

SOCIAL MEDIA HANDLES

@Agrsmarttech and
agr_smart_tech



PERSONAL PROFILE

Caroline Matenchi has a diverse background in science, customer technical support, and entrepreneurship. Currently, she serves as the Founder and CEO of AGR, a smart tech startup company. Caroline holds a Bachelor of Science degree in Life Sciences, which has provided her with a strong foundation in analytical thinking and problem-solving. Caroline has been involved in various projects and programs that have allowed her to refine her skills and expand her network. As a participant in the University of South Africa innovation challenge in 2020, she had the opportunity to showcase her innovative thinking and entrepreneurial mindset. Caroline is currently enrolled for entrepreneurship at Technological Higher Education Network South Africa (THENSA), as a graduate student at the Future Females Business School in partnership with the UK-South Africa Tech Hub. This program provides her with exposure to cutting-edge business and technology trends, enabling her to stay ahead in the rapidly evolving tech landscape. Caroline also contributes to sustainable farming practices. She is a part-time farmer and dedicated volunteer at the University of Johannesburg Ecological Research Center, where she actively participates in growing vegetables and implementing sustainable farming strategies. Additionally, her involvement in yield monitoring showcases her commitment to optimizing agricultural techniques and maximizing productivity.

COMPANY DESCRIPTION

Agr-smart tech is an Agritech manufacturing company specializes in producing innovative sensors for the agriculture industry. With a focus on leveraging technology and automation to improve efficiency and sustainability, we design and manufacture cutting-edge equipment for farmers, agricultural businesses, and food producers in South Africa. Our products range from smart farming systems such as our Pedology 7 in 1 sensor and precision reading of environmental elements to sustainable irrigation and soil nutrition protection solutions such as our worm tea fertilizer . By combining industry expertise with advanced engineering capabilities, we aim to revolutionize agricultural practices and contribute to sustainable food production for a growing global population-smart tech , our mission is to empower farmers and food producers with innovative agritech solutions that enhance productivity, profitability, and sustainability. Through our commitment to continuous research, development, and collaboration, we strive to build state-of-the-art equipment that drives efficiency, minimizes waste, and conserves natural resources. By harnessing the power of technology and data analytics, we aim to streamline agricultural processes, optimize resource allocation, and minimize environmental impact. We are dedicated to enabling a future where farmers can achieve higher yields, reduce costs, and contribute to a more sustainable and resilient food system.

INNOVATION PROFILE

The 7-in-1 Peodolgy sensor developed by Agr-tech Smart. The sensor is a real-time monitoring of soil conditions. By providing data on soil temperature, moisture, pH, electrical conductivity (EC), nitrogen (N), phosphorus (P), potassium (K), and carbon dioxide, the device can help farmers, gardeners monitor soil nutrition condition and water content in the soil. We make organic worm tea fertilizer to reduce the use of chemical fertilizer. We offer both sales and rental options for the device provides flexibility to potential customers. Renting the device allows users to access its capabilities without the commitment of buying it. Additionally, providing readings to customers who purchase the device can store data for a session to keep records via a subscription.

The inspection and analysis service offered to those renting the device demonstrates Agr-tech Smart's commitment to delivering personalized recommendations and solutions. By examining the area of interest, the team can provide tailored insights and help users optimize their farming, gardening, or fertilizer manufacturing practices.

Confidential - Company Proprietary

GERHARD KRIEL

CEO

Agri Business
Network



SECTOR/S

Water - Energy - Food

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

www.agbiznetwork.co.za

PERSONAL PROFILE

With more than 30 years experience in the Food, Agriculture and Medical sectors, I seek technology solution to low hanging fruit problems. Sustainability and Productivity are key words in my world and we bring to market solutions that help and support all sizes of business ventures from start-ups to larger organisations.

As a qualified Food Scientist, Microbiologist and Biochemist with Advanced Strategic Management, Marketing and Investment analysis background supported by an Masters in Business Leadership, I focus on making and advising on change where the impact can be immediate.

COMPANY DESCRIPTION

Agri Business Network (ABN) seeks to create NETWORKS | RELATIONSHIPS | VALUE.

We bring like minded people together who are in search for solutions.

INNOVATION PROFILE

ABN launched AgRetail - a Modern Digital Buying Group platform in South Africa that support farmers in procuring inputs cost effectively.

The Buying Group platform assists everyone in marketing their finished products in various quantities to a wide spectrum of users.

ABN aims to introduce a platform that makes the value chain in the dairy industry visible which will ensure sustainability of the industry as well as food security.

RUVEN PILLAY

Chief Operation
Officer

Biological
Agricultural Era



SECTOR

Water – Energy - **Food**

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

Facebook: Biological Agricultural Era;
Instagram: BioAge_21

PERSONAL PROFILE

I am Ruven Pillay, a post-graduate of UKZN, that specialized in molecular biology. Concurrent to my Bs.C (Hons), I completed a software engineering degree that enables me to contribute to the molecular and digital aspects for BioAge. I am passionate about agriculture and driven to merge science with agriculture to unlock the potential of agriculture and contribute to food security. A personal value that has become transcribed into BioAge is that we always set high standards and achieve it.

COMPANY DESCRIPTION

Biological Agricultural Era or BioAge is an Agri-Biotech company developing propitious bio-fertilizing solutions. The biotechnologies merge science with agriculture to introduce molecular farming, a method of increase plant growth efficiency through metabolic stimulation. The BioAge product range encompasses liquid fertilizers, bio-stimulants, hydrogel and triple cored based fertilizers, all developed by recycling nutrients present in agricultural waste to augment circularity and introduce sustainability in the agricultural paradigm.

INNOVATION PROFILE

The vision for BioAge is to employ agriculture as a vector for societal and economic transformation. The technologies developed and implemented at BioAge encompass a liquid fertilizer and stimulant developed by recycling nutrients from waste. The specific composition enables the product to interact with the plant on a molecular level to increase plant growth, yield and harvesting time. The solution is geared to address food security in South Africa by introducing a product to enhance productivity, sustainability and is affordable to all.

SIPHESIHLE MTHETHWA

Drone Pilot &
Innovator

Drone Eye
Technology



SECTOR

Water - Energy - Food

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

[Drone Travel Experience App](#)

PERSONAL PROFILE

Siphesihle Mthethwa is a Co-founder of Drone Eye Technology. He holds a Bachelor of Commerce in Business Innovation & Entrepreneurship. He is a Project Manager and a Certified Drone Operator. He has managed to accumulate more than 100 hours of flying drones; He is motivated to learn from the organization and provide his knowledge/skills to help achieve the company's goals. He has managed and co-founded two successful digital prototype start-up projects both in education and primary healthcare. License # 0275506510.

COMPANY DESCRIPTION

Drone Eye Technology was established in 2019 to seek innovative ways to conserve water and inspect solar panels. Rapid intelligence gathering for better decision making and traceability of root causes. This is an environmental, social, and economic innovation that leverages the power of drone technology to improve water quality, service delivery, enabling more clarity on the status of the environment, wetlands, and renewable energy. Utilizing drones to do water sample for water quality monitoring and testing, especially in deep water or wide range areas and digital reporting through Drone Eye Technology App.

INNOVATION PROFILE

Drone Travel Experience powered by Drone Eye Technology App was successfully designed and functional. Drone Eye Technology want incorporate drone technology and this app to be able to generate comprehensive reports and keep records of the state of water quality and solar panels. Utilize this app will enable enviro champs and community at large to report water crisis. Assisting environmentalists and conservationists to save time, money and resources when responding to such issues. Cost effective for business and ability to save precious field resources. Reducing government financial loss through deploying drone technology.

SIDHARTHA MALLIK

Technical Director

E2 Business
Solutions Pty Ltd



SECTOR

Water - **Energy** - Food

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

<https://www.linkedin.com/in/e2-business-solutions>

PERSONAL PROFILE

-15 years experience in electrical & automation field in different role and responsibility. Currently heading technical director role in E2 Business Solutions. Work across different countries like India, Mozambique & South Africa.

-Qualification BE in electrical engineering , project management & quality assurance.

-My interest on renewable energy specifically on hydrogen based energy solutions, grid efficiency & remote monitoring.

COMPANY DESCRIPTION

E2 Business Solution based in Boksburg, Gauteng province in South Africa. We started in 2017 providing sales & service on electrical, instrumentation & automation engineering products to different industrial, mining & manufacturing company. E2 Business working towards bringing grid efficiency & monitoring system to improve overall energy efficiency and reduce loss on power network.

INNOVATION PROFILE

E2 Business working on product for grid transmission & distribution network to become energy efficient , lowering the energy loss & stable grid. Through this we can able to reduce the carbon footprint and to available reliable energy for south African communities. We looking for UK partner who can assist us on IOT technology & remote monitoring system to enable grid efficiency project.

We committed to bring energy for all and zero load shedding by reduce energy loss on different level of energy process (generation, transmission & distribution) .

ZIYANDA DUMALISILE

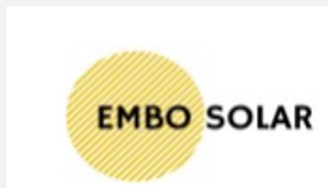
Managing Director

Embo Solar



SECTOR/S
Water - Energy – Food

COUNTRY
South Africa



SOCIAL MEDIA HANDLES

www.linkedin.com/in/ziyanda-dumalisile

PERSONAL PROFILE

I am Ziyanda Dumalisile, a versatile business professional with experience across various sectors including petroleum, solar energy, and agriculture. With four years of entrepreneurial experience, I am skilled in problem-solving and client relations, excelling in managing diverse tasks and deadlines. I have a National Diploma in Supply Chain Management, from Nelson Mandela University. Actively involved in the Foxwood Dam Committee, I lead efforts to uplift the local economy. My passion lies in promoting rural development, advocating for equitable resource allocation, and driving positive change through innovative business solutions.

COMPANY DESCRIPTION

Embo Solar specialises in pioneering solutions that blend renewable energy with agricultural practices. Our primary focus is on agrivoltaics, a cutting-edge approach that combines solar energy generation with farming activities to maximize land efficiency, resource conservation, and sustainable progress. Through this initiative, we aim to tackle critical issues surrounding food, energy, and responsible use of water, while simultaneously driving economic prosperity and environmental responsibility within our rural communities

INNOVATION PROFILE

At Embo Solar, we aim to revolutionize farming with the use of agrivoltaics technology. By combining solar panels with agricultural land, we aim to maximise the use of space, conserve resources, and promote sustainability. Join us in pioneering a brighter, greener future for farming and renewable energy.

TSEDZU NETSHIMPUFE

Founder and CEO

FarmRu

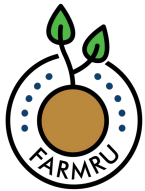


SECTOR/S

Water - Energy - Food

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

Facebook: @Farmru1 IG: farmr.u

PERSONAL PROFILE

I am the founder and CEO of Roonovate Technologies (Pty) Ltd, trading as FarmRu. I hold a Bachelor of Commerce degree, specializing in Information Systems, and a Postgraduate Diploma in Management, specializing in Entrepreneurship from the University of Cape Town. My passion lies in promoting technology innovation and entrepreneurship for African development.

COMPANY DESCRIPTION

FarmRu is a cost-effective farming solution designed to assist small-scale farmers in making informed decisions about soil quality and water conservation. By providing real-time data insights into soil fertility, FarmRu empowers farmers to determine suitable plant types and save money on inputs, ensuring healthy crops. With FarmRu, smallholder farmers can be confident that they are making the most efficient use of their resources, as the smart watering function of the system only waters plants, when necessary, based on real-time measurements of the conditions. To make farm data more accessible, FarmRu also includes a mobile application and USSD system for remote access. This feature helps farmers to become more skilled and efficient in their farming practices.

INNOVATION PROFILE

I'm Tsedzu, founder and CEO of FarmRu, an Agri-tech start-up from South Africa with a patented technology solution. Our goal is to help smallholder farmers save water and maintain soil quality for healthy crops. With FarmRu, farmers increase productivity and reduce resource waste. Interested in partnering with us to transform agriculture in Africa?

NOMAHLUBI NOMPUNGA

Founder & Scientist

Foi Science



SECTOR/S

Water - Energy - **Food**

COUNTRY

South Africa



Biopolymer - Phytochemistry - Entrepreneurship

SOCIAL MEDIA HANDLES

<https://foiscience.co.za/>

<https://www.linkedin.com/in/nomahlubi-nazo>

PERSONAL PROFILE

Nomahlubi Nompunga is a dedicated and visionary entrepreneur with a strong background in Cosmetic Formulation Science and Polymer Science. They are passionate about creating innovative and sustainable skincare solutions that make a positive impact on society and the environment. Their commitment to empowering communities, particularly rural and disadvantaged groups, drives them to develop accessible and high-quality products. Nomahlubi's expertise, combined with their entrepreneurial spirit and dedication to social and environmental responsibility, sets them apart as a leader in the skincare industry.

COMPANY DESCRIPTION

Foi Science is a company that specializes in sustainable skincare solutions. We innovate by utilizing biopolymer technology derived from food and marine waste to create high-quality ingredients for our products. Our Rapha skincare range, for example, incorporates healing biopolymers into formulations designed for scar and wound care. Additionally, through our Cosmetic Craft arm, we offer research and development services, helping entrepreneurs create their own skincare products. Our commitment to sustainability, innovation, and empowerment drives us to revolutionize the skincare industry while addressing critical social and environmental challenges. <https://uvuafrica.com/blog/foi-sciences-promoting-sustainability-in-skincare/>

INNOVATION PROFILE

Foi Science is a leader in sustainable biopolymer technology, transforms food waste into healing biopolymers blended with botanical extracts, producing innovative scar and wound care products like the Rapha Wound Gel. Beyond products, Foi Science's impact extends to empowering communities in South Africa's Eastern Cape through the Foi Science Virtual Hub, offering training in circular economy principles and cosmetics formulation. Their Cosmetic Craft range provides research, development, and white-label product bases, supporting entrepreneurship and environmental stewardship. Foi Science's pioneering work blends science with sustainability, shaping a more inclusive, innovative future.

THABO MNGOMEZULU

CEO

Gentle Ginger t/a
Kasi Gas



SECTOR/S

Water - Energy - Food

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

LinkedIn: Thabo Mngomezulu

PERSONAL PROFILE

Growing up in a rural village, I have a first-hand understanding of the challenges faced by these communities, particularly in the areas of waste management, food security and access to clean energy. My love for music led me to pursue a career in this field, and I was fortunate enough to gain recognition and become a role model for many young people in my village. However, the lockdown restrictions took a toll on my career, prompting me to seek a more sustainable and impactful path. I found this path in agriculture, specifically in a crop farming project that allowed me to gain valuable insights into sustainable farming practices and waste management processes. My interest was piqued by biogas, a solution that addresses three critical issues in rural South Africa: waste management, lack of access to clean energy, and sustainable agricultural practices.

COMPANY DESCRIPTION

Kasi Gas is passionate about transforming rural communities in South Africa by converting organic waste into valuable resources such as Biogas and Organic fertilizer. We are committed to providing sustainable solutions that promote healthy living, address environmental concerns and support local economies by meeting their energy needs and promoting sustainable agricultural practices .

INNOVATION PROFILE

At Kasi Gas, we are pioneering sustainable solutions at the pre-seed stage by establishing commercial plants in Rural South Africa. Our mission is to transform organic waste into valuable resources like Biogas and organic fertilizer.

Our Biogas production offers a renewable energy source that is cleaner and more cost-effective for cooking and heating compared to current options in rural South Africa. This innovation addresses the energy needs of communities facing challenges like load shedding, providing an affordable alternative to solar and other renewable energy sources. Additionally, our organic fertilizer contributes to soil health by addressing the degradation caused by chemical fertilizers and mono cropping. By improving soil quality, we aim to help farmers achieve better crop yields and sustainable agricultural practices. Moreover, in areas lacking waste management services, we tackle the issue of open-air dumping by converting organic waste into useful products at our facilities. This not only addresses environmental concerns but also creates a positive impact on local communities. Kasi Gas is committed to driving environmental sustainability, energy accessibility, and agricultural productivity in Rural South Africa through innovative waste-to-resource solutions.

MOSA MAPHETO

Director

Greatfuel



SECTOR

Water - **Energy** - Food

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

LinkedIn _ Mosa Hope Mapheto
Website_ <https://greatfuel.co.za/>

PERSONAL PROFILE

I am Hope Mapheto. I believe to be a social entrepreneur. My journey began with a deep-seated belief in the power of entrepreneurship to drive meaningful progress. With a heart for both business and sustainability, I've focused my efforts on the renewable energy sector. From humble beginnings, I've dedicated myself to developing solutions that not only generate profits but also contribute to a cleaner, more sustainable future for generations to come. Through perseverance, creativity, and a relentless drive to make a difference, I've embarked on a mission to revolutionize the way we harness and utilize energy, one renewable project at a time.

COMPANY DESCRIPTION

Greatfuel produces biodiesel from waste cooking oil collected from restaurants and the local community. Our company is dedicated to producing high-quality biodiesel fuel from renewable sources. We're committed to sustainability and reducing our carbon footprint. Through innovation and efficiency, we aim to contribute to a cleaner, greener future.

INNOVATION PROFILE

Our company is a pioneering force in the biodiesel industry, dedicated to revolutionizing the fuel landscape with sustainable solutions. With a relentless focus on environmental stewardship, innovation, and quality, we produce high-grade biodiesel that reduces carbon emissions and promotes a greener tomorrow.

MAHLANGU GUGULETHU

CEO

House Harvest



SECTOR

Water - Energy - **Food**

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

@GUGULETHU_CM (X and Insta)

PERSONAL PROFILE

As a native of a mining town, I bring a unique perspective to agriculture. With 7 years of farming experience and 3 years specializing in aquaponics, my BSc in Agricultural Science informs my innovative approach. I am the founder of #FarmSpacesAfrica, leveraging digital platforms for agricultural advocacy. Recognized as a citizen journalist and award-winning farmer, I serve as a Max Thabiso Edkins Ambassador and Next Gen AG Impact delegate for 2024. Passionate about food access and advancing Sustainable Development Goals 2, 5, 6, 9, 12, 14, and 15, I am committed to creating a 'Green Wakanda' in my country through sustainable agricultural practices.

COMPANY DESCRIPTION

Founded in Witbank Emalahleni, our company pioneers the just transition, aiming to address climate change impacts. With an aquaponics pilot project in Makhanda, we scale our efforts, developing a model for case study areas across Africa. Our mission is to deliver fresh food access, sustainable job creation, and a one-stop hub for virtual and online training on food, energy, and water. South Africa, as a significant greenhouse gas contributor, faces pressing environmental challenges. Our goal is to create net-zero solutions, mitigating climate change effects and fostering sustainable development for a greener future.

INNOVATION PROFILE

Our aquaponics system combines fish farming with plant cultivation. We use inverters for energy efficiency, feed our fish black soldier fly protein for nutrition, and raise koi, tilapia, and barbel fish. We grow African foods like morogo, african eggplant, and baby leaf spinach alongside high-value crops. By fertilizing with wood ash and vinasse, our system is pesticide-free and environmentally friendly.

OWEN VAN DONGEN

Co-founder &
Project Manager

Just Transition Lab



SECTOR/S

Water - Energy - Food

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

www.justtransitionlab.org

<https://za.linkedin.com/company/just-transition-lab>

PERSONAL PROFILE

I have over 10 years of experience in transformation, specialising in small business development in South Africa. I am interested in driving socioeconomic change through opportunities presented in the transition to net zero.

I've worked across diverse industries, including projects at the intersection between mining and community development. I have a postgrad in Sustainable development planning complimenting my experience in commerce.

COMPANY DESCRIPTION

We are a lab to test, develop, implement, learn and scale commercial projects for a Just Transition investment pipeline in the global South.

We have started implementing a portfolio of experiments and pilots, initially at an active coal mine in South Africa, to understand and share lessons on the challenges associated with delivering a just transition. We are focusing on projects in Net Zero Markets, Sustainable food and Bioeconomy. We have a large focus on repurposing coal mines with innovative small business in the green economy.

INNOVATION PROFILE

We are exploring a number of innovative projects including;

- Using underground mine tunnels for 'indoor' hydroponic farming. (operational pilot underway)
- Industrial hemp (for soil remediation of opencast mines, biofuel, biochar and industrial use)
- Black Soldier Fly farming (developing franchise model for faster and more equitable expansion)
- Gourmet Mushroom growing and processing (using thermally stable underground mine spaces)
- Community-owned renewables business model (leveraging local policy incentives)
- Custom electric vehicles (for specific mine and farming use cases)
- Retrofitting low income homes for energy efficiency

ONICCA SIBANYONI

Founder

Jwale Corporations



SECTOR

Water – Energy - Food

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

@jwale_farms (Instagram)

PERSONAL PROFILE

I'm a Business Management graduate, and the 2023 Global Circular Innovator challenge Good Wall winner. I'm passionate about green innovation and I'm part of the H2020 project on Women in Science, Technology and Innovation in agriculture with the focus on agrifood and green economy to influence a context-sensitive understanding of innovative policy options between the global North and global South. I'm a special needs mom.

COMPANY DESCRIPTION

Jwale Corporations promotes aquaponics as an ecological farming method that mitigates the impact of climate change and increases food security while demystifying aquaponics through awareness and education in order to better mitigate the impact of climate change locally. Our farming practices are rooted in Traditional Ecological Knowledge i.e. we use low-tech, easily adaptable and accessible growing techniques rooted in natural symbiosis. We cultivate a wide variety of vegetables, herbs, medicinal plants, and flowers that demonstrate the range of plants capable of growing in an aquaponics system. We operate a Zero waste farm with a circular economy approach.

INNOVATION PROFILE

Jwales natural aquaponics farming method changes how food is produced, distributed and valued by society. Farming without the use of pesticides, herbicides, fertilisers and without any seasonality constraints. Ensuring we deliver naturally grown produce quicker to the market, consistently and reliably throughout the year. Whilst saving 90% water in the process of farming both crops and fish at the same time. We are looking for energy companies to help us innovate energy solution that will allow us to set up aquaponics farms in the harshest and remote of enviroments and conditions, and also for water companies to help us explore the possibilities of using cleaned polluted water to run systems in places that face severe water polution.

MATOME MOTALANE

Managing
Director

Mangau
Sciences



SECTOR/S

Water – Energy - Food

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

PERSONAL PROFILE

My name is Matome Motalane from Mankweng located in Limpopo province, South Africa. I am a BSc Biochemistry and Microbiology graduate from University of Venda and I hold various certificates in HACCP, Pre-requisites of food manufacturing, Circular Economy, Digital Transformation, Waste Management, Financial and Risk Management and I am also a graduate in Entrepreneurship studies from Gordon Institute of Business Science. I am analytical and passionate about product development and developing solutions that are sustainable, affordable, user-friendly and convenient.

COMPANY DESCRIPTION

Mangau Sciences (Pty) Ltd t/a Mangau Animal Feeds is a green business in Agro-processing of high yield, organic animal feeds, Agritech and e-commerce whereby we have developed a mobile app that will be used to offer our customers convenience by saving them time and money by purchasing products and request for the services of their choice through our mobile app. Our solution aim at tackling challenges of food insecurity, disease outbreaks of animal origin, reduce the use of cancer causing products and improve malnutrition and unprofitable livestock.

INNOVATION PROFILE

Our goal is to employ the use of essential oils of which UK has been leading through extraction of such oils for usage in food production and make use of black soldier fly in animal feed production to increase the rate of protein rich products to supplement the growing human and animal populations whilst growing drought resistant crops by collaborating with rural communities. Introduce activated charcoal for purification of water for deep rural areas that do not have clean water and this will help both humans and animals.

MMAPULA LESAILANE

CEO

Mater Pluviam
Holdings



SECTOR/S

Water - Energy - Food

COUNTRY

South Africa



SOCIAL MEDIA HANDLES



@materpluviam



+2760 503 5386



Mater Pluviam Holdings



www.materpluviam.com



+2760 503 5386



info@materpluviam.com

PERSONAL PROFILE

Mmapula Lesailane, a distinguished South African scientist and visionary CEO of Mater Pluviam Holdings, achieved a Master's in Genetics from Stellenbosch University with the highest honors, cum laude. With over six years of research experience, her expertise encompasses sustainable farming, plant pathology, renewable energy (biogas), bioinformatics, waste management, phytoremediation, organic fertilisers production, and scientific research commercialisation. Collaborating globally and locally with esteemed institutions like the University of Sao Paulo, University of Limpopo, University of Johannesburg and Stellenbosch University, she drives impactful research. Recognised for her contributions, Mmapula has been featured in various publications and honored by Mayors for her achievements in agriculture. Her efforts have been commended by the Deputy President of South Africa during her representation of the country in Brazil, where she showcased innovative agricultural practices on an international platform. Additionally, she passionately advocates for the establishment of one-stop rural economic hubs anchored in agriculture, believing in their potential to revolutionise local economies and empower rural communities.

COMPANY DESCRIPTION

Mater Pluviam Holdings is an award-winning and esteemed science company that has garnered recognition for its remarkable achievements in bridging the gap between scientific knowledge and practical applications. Comprised of a team of brilliant scientists, the company boasts expertise in various fields such as science, agriculture, technology, and engineering, amassing a collective experience of over 20 years in the science application industry. With their deep understanding of scientific principles and their practical implications, Mater Pluviam Holdings excels in utilising their knowledge to tackle real-world challenges. Their ability to leverage scientific expertise in innovative ways enables them to develop solutions that address pressing issues and drive positive change. With their dedication to advancing scientific knowledge and translating it into tangible outcomes, Mater Pluviam Holdings continues to make significant contributions in the realm of applied science. Their expertise extends to providing guidance and support in agricultural practices, validating scientific research projects, implementing solutions for environmental remediation, harnessing biogas for sustainable energy production, and effectively managing waste streams. Through these diverse service offerings, Mater Pluviam Holdings demonstrates their commitment to applying scientific knowledge and innovative approaches to address crucial issues in agriculture, environment, and energy sectors.

INNOVATION PROFILE

The Limpopo Province, renowned as the agricultural heartland of South Africa and hailed as the "fruit basket" of the nation, faces significant challenges posed by climate change, particularly in its impact on soil health and agricultural sustainability. With a substantial population of small-scale farmers whose livelihoods depend on the land, addressing these challenges is of paramount importance.

Climate change-induced phenomena such as erratic rainfall patterns, prolonged droughts, and soil degradation pose a significant threat to agricultural productivity in the region. Agriculture, being the cornerstone of rural communities, not only sustains livelihoods but also drives economic development and food security in the province.

Recognizing the urgency to mitigate these effects, a comprehensive approach centered around soil rehabilitation and climate resilience is indispensable. Through innovative solutions and strategic interventions, we aim to restore soil health, enhance agricultural productivity, and bolster the resilience of rural communities in the face of climate change.

GRAEME ORTLIEB

MD

NexClean



SECTOR/S

Water - Energy - Food

COUNTRY

South Africa

SOCIAL MEDIA HANDLES

X - @graeort

PERSONAL PROFILE

A Process Engineer by training and Entrepreneur, Executive, consultant and project/program manager, with over 20 years experience in managing multi-disciplinary teams of varying sizes and complex programs of work. Has the ability to build strong relationships with all stakeholders and to turn proposals into reality. Especially successful in management roles that demand rigor, a high level of drive and dedication and a focus on delivering business outcomes through the use of methodologies tailored to the requirements of the client and project demands.

Focus on creation of sustainable water solutions for the past 6 Years and Responsible for implementing a diverse range of water systems.

COMPANY DESCRIPTION

NexClean provides the latest technology, aligned with sophisticated products and services, required to facilitate the efficient use and reuse of water in private, commercial, industrial and public sectors. We strive to deliver water and power in an environmentally friendly manner. We partner with suppliers of water delivery products and services, and suppliers of water management software, who understand and supply to the African market. We focus on all areas of water supply and reuse ranging from strategic conceptualisation and design, to deriving accurate water consumption data, to providing clarification and purification technology equipment that meets African requirements.

INNOVATION PROFILE

NexClean and its partners bring patented technology-based solutions to deliver functional and sustainable green solutions

- the next generation of water clarification, disinfection to the water and wastewater industry
- can be retrofitted into existing treatment systems to enhance performance or
- installed as a new system to meet tight discharge limits at the lowest cost.

JABULANI MADLALA

Chairman

Smart AgrIoT Rural
Development NPC



SECTOR/S

Water - Energy - Food

COUNTRY

South Africa



Smart Rural Development
Transitioning and Providing Access To Rural Communities

SOCIAL MEDIA HANDLES

X - @smartagriot, F-/smartagriot

PERSONAL PROFILE

Demonstrated experience in the industry. Worked for corporates in the USA, UK, and South Africa before going entrepreneurial. While at corporate, I successfully managed large implementation projects and programmes to the value of R250 million. Started several successful startups with 70% of them sold and 30% still operational. With the computer science academic qualification majoring in Artificial Intelligence, complimented by others in finance, business, agriculture, I am able to apply to needed rural societal problems to develop solutions that will make a huge impact to their livelihoods.

COMPANY DESCRIPTION

Carbon farming As A Service is the primary service that address the Lack of ACCESS to technologies, resources, skills, markets, and finance by many rural communities including farmers. We do this by providing the services on a PAY AS YOU GO basis, making it affordable as they do not require any capital and they can benefit and have all the needed ACCESS. The secondary being to transition the farmers to make a contribution to reducing GHG emissions and benefiting from carbon credits over the duration of carbon projects.

INNOVATION PROFILE

Technology allows for the digitization and digitilization of the farms for easy measurement, monitoring, management and reporting to allow farmers to take decisions that will result in reduced farming costs, higher yields, reduced water usage, quality food, and more carbon sequestration.

YONELA NZUZO

Managing Director

Umbane Energy
Investments



SECTOR/S

Water - Energy - Food

COUNTRY

South Africa



SOCIAL MEDIA HANDLES

Website: www.umbane.energy

PERSONAL PROFILE

Mechanical and Mechatronic Engineer; Independent Power Producer Founder

I have built up an experience in the renewable energy sector with project finance, project development, esoteric technology, dual-infrastructure (solar production and farming). My background in mechanical and mechatronic engineering aids me in researching how we can localise technology solutions to aid Africans. Africa is my primary developmental focus and how we can use the Just Energy Transition effectively to uplift Africa and Africans; sustainably.

COMPANY DESCRIPTION

We apply our innovation to project finance, site selection and technologies to navigate the African context and its struggles. We are embarking on Project Nkululeko to leverage our energy projects for rural industrialization; sustainable local economic development in these regions and self-determination of communities. Nkululeko aims to facilitate the development of rural and underserved communities – by leapfrogging traditional development pathways, and prioritising industrialisation, skills development and job creation through asset-building in rural and under-served areas. We source and structure innovative, proven technologies and implementation partners to execute on this category of interventions augments the economic foundations of the community through the implementation of Smart Solutions in key (identified) economic areas potentially including, Agriculture and Agro-processing, Manufacturing and/or Assembly, Renewable Energy Value Chain, Mineral Beneficiation, Mine Rehabilitation, Waste Management and Waste Value Chain.

INNOVATION PROFILE

Our specific tech solution is agrivoltaic interventions/adaptions for localisation to Africa.

- Agrivoltaic Design: inter-spacing between arrays for agricultural production. Construction and O&M considerations for low environmental impact. Utilising vertical-bifacial panels (with intercropping) for optimising heat temperature performance conditions.
- A Passive Solar greenhouse that combines ground-to air-heat-transfer (GAHT) and building-integrated-photovoltaic (BIPV). This creates a super energy efficient greenhouse that passively cools and warms your greenhouse while producing electricity.

YANGA TEKANE

Founder/Specialist
Engineer

YGE BHI



SECTOR/S

Water – Energy - Food

COUNTRY

South Africa



PERSONAL PROFILE

Yanga Tekane is a registered professional engineer with Engineering Council with Master of Engineering (Summa Cum Laude) and Bachelor of Science in Engineering. Previously he has worked for Council for Scientific and Industrial Research, help built the SME Sovereignty Systems (Pty) Ltd as the first employee and is former Chief Engineer for a Sub Directorate Infrastructure Planning: Electrical/Mechanical Engineering in Eastern Cape Department of Education. Currently he is a Founder & Specialist Engineer at YGE BHI.

COMPANY DESCRIPTION

YGE BOREHOLE INVESTIGATORS(PTY)LTD T/A YGE BHI (2017/4521/07), established in 2017 and we ensure groundwater extraction is sustainable with capability to build and operate complex equipment for all onsite challenges. We are looking to expand to geothermal water and geothermal energy.

INNOVATION PROFILE

We use our patented energy storage to power all the equipment we have designed. We have designed and built sustainability yield testing rig that is trailer mounted that is capable of conducting calibration tests, constant rate test, drawdown measurements and recovery tests.