

2017 Sustainable Innovation Expo 4-6 December

Annex 1 – Company Profiles

Overview

UN Environment’s Governance Affairs Office received a high volume of applications from over 2,000 companies all over the world to participate in the 2017 *Sustainable Innovation Expo*. With only 42 booths to fill, UN Environment established a selection process, including the following criteria:

- The technology or innovation the company wished to display;
- The unique nature of this technology or innovation;
- How well the company’s technology or innovation fit with the overarching #BeatPollution theme of the Assembly;
- The geographical region that the company was coming from;
- Whether or not the company was able to finance their travels to Nairobi, Kenya in order to attend the Expo.

The selected exhibitors were organized into eight different categories:

1. Chemicals and Waste
2. Transport
3. Air and Water
4. Information Technology and Big Data
5. Solar Power
6. Services
7. Business France
8. Switch Africa Green



Chemicals and Waste

- **Boysen**
Philippines

Who they are:

Boysen is one of the leading paint companies in the Philippines, among the top 20 in Asia, and among the top 60 in the world. Boysen is working to create an innovative technology to help beat air pollution. This technology is called KNOxOUT and it transforms any surface it's painted on into an air purifier using the power of the sun. The process by which KNOxOUT is able to transform noxious air pollutants into harmless substances is called photocatalysis, which is activated by sunlight (or UVA light indoors). The key ingredient in the paint that makes this possible is ultrafine titanium dioxide (TiO₂) called CristalActiv. KNOxOUT is the first, and up to now the only paint in the world with CristalActiv.

How they are working to beat pollution:

Boysen has created the first air-cleaning paint in the world with CristalActiv technology. The effectiveness of the technology has been proven in different trials in Europe and Asia, and KNOxOUT has been used in various countries in Asia, the Middle East, Europe and the Americas. KNOxOUT is applied just like any normal house paint and is therefore easily scalable. As painting is an activity everyone can do, KNOxOUT gives everyone a chance to do something about air pollution. KNOxOUT is a very empowering technology that gives ordinary people the power to help beat pollution by transforming ordinary walls into air filters.

For more info visit <http://www.boysen.com.ph>

- **Chloride Exide**
Kenya, Uganda, Tanzania

Who they are:

Chloride Exide's core business is the distribution of automotive batteries, solar system installation, backup system installation, solar water heating and wind energy system installation. Chloride Exide has grown from a single based operation to being the largest battery and renewable energy distributor in the East African region. Their brand is currently supported by a region wide network of over 17 branches and over 400 dealers in the region.

How they are working to beat pollution:

Chloride Exide has been working on taking on a private sector role in guiding the transition to a greener, more energy efficient world. They are focusing on lead management, renewable energy as a business, and a 'lighting hearts initiative' which involves providing solar packages for children in schools and in children's homes.

For more info visit www.chlorideexide.com

- **Enviroserve**

United Arab Emirates, Kenya

Who they are:

Established in early 2017, Enviroserve East Africa is a dedicated electronic waste recycling initiative. Enviroserve Kenya has been set up to target the problem of electronic waste (e-waste), by recycling electrical waste to global standards with the target of zero waste to landfill. In the first phase of their Kenya operations, the company will sort, break down and categorize e-waste at their new Nairobi facility. Elements are then sent to the company's specialized plant in Dubai for separation into core reusable fractions.

How they are working to beat pollution

Most e-waste is dumped into general waste streams and landfills. Circuit boards, plastics and metal components in e-waste contain harmful chemicals such as arsenic, lead, mercury, cadmium, copper and other metals and plastics. Poisonous substances can leak from decomposing e-waste into landfills, seep into groundwater, contaminate the soil and enter the food chain. Enviroserve Kenya has been recycling this electrical waste to global standards by sorting and breaking down the e-waste. The waste is then sent to be separated into reusable fractions at their specialized plant in Dubai.

For more info visit www.enviroserve.org

- **Keekonyokie Biogas Enterprise**

Kenya

Who they are:

Keekonyokie Biogas Enterprise is a slaughter house which has been working on a waste to energy conversion strategy. They have built a biogas plant, a gas storage unit, and a CHP engine which uses biogas to light up the premises. In addition, they have been selling biogas to community members to use as cooking fuel.

How they are working to beat pollution:

David Chege, a mechanical engineer and the technical manager at the plant, is working on making slaughterhouses to contribute to a clean environment and see how this can help to generate an income from the slaughterhouse waste. He also sensitizes slaughterhouses across the country on how they can convert their waste into energy. This provides a way for slaughterhouses to eliminate excess biogas emissions by harnessing the biogas produced by slaughterhouse waste, and turning it into useful biogas for communities and for the environment.

- **Ion Exchange – VITO**

Belgium

Who are they:

Ion Exchange and VITO have created a joint concept called ANDICOS™ to tackle waste water and waste in emerging and developing countries. Ion Exchange is a pioneer of water treatment in India with a legacy spanning over five decades. Ion Exchange (India) Limited is recognized internationally as a premier company in water and environment management; while VITO is a leading European independent research and technology organization in the areas of clean technology and sustainable development, elaborating solutions for the large societal challenges of today.

How they are working to beat pollution:

Their joint ANDICOS™ concept allows a combined treatment of waste and waste water, which leads to high energy production and cost reduction. The biogas is further converted to electricity; and the amount of added organic waste will define the benefit that can be made with the installation. The ANDICOS™ concept can also be used to retrofit and expand existing aerobic wastewater treatment installations without high investment costs and can reduce the overall energy costs of the existing installation.

For more info visit www.ionindia.com and www.vito.be/en

- **SISTEMA.bio**

Mexico, Latin America, Asia, Africa

Who they are:

SISTEMA.bio is a hybrid reactor biodigester that transforms the manure of animals into biogas and a potent natural fertilizer. By inputting the manure into the system on a daily basis, one will be able to develop and grow farming activities, improve energy security, and protect the environment. Transforming animal manure into resources will provide everyone with a better quality of life. SISTEMA.bio provides farmers with interest free payment plans combined with a program that provides six months of training to ensure optimal benefits and sustained adoption of the products.

How they are working to beat pollution:

The hybrid reactor biodigester converts animal wastes, that would otherwise produce greenhouse gases, to produce biogas and biofertilizer and thus reduces the energy cost, the time burden or firewood collection, increases agricultural yields and reduces health and environmental risks. In addition, through waste management, SISTEMA.bio protects watersheds from nitrogen loading. This creates savings for farmers and reduces poverty and food insecurity.

For more info visit <http://sistema.bio>

Transport

- **AIRBUS Defence and Space**

France

Who they are:

AIRBUS Defence and Space works to create innovative space solutions and aerospace products. It has been a leading provider of geographic information products, software and mapping services, for over 25 years. The company has a portfolio of geographic information solutions including satellite data acquisition, operational emergency planning systems, geo-information creation, database management and outsourced hosting.

How they are working to beat pollution:

Based on a strong experience of more than ten years, the provided Earth Observation solutions are addressed to a wide range of applications for the environment, agriculture, drought, flood and fire monitoring, emergency response, etc. Airbus is currently working with farmers in rural Kenya to transfer the knowledge that scientists have been gathering, to be used and applied by communities on the ground.

For more info visit www.airbus.com

- **Dave TukTuk**

Kenya

Who they are:

Dave TukTuk's new electric Tuk Tuk¹ provides a non-polluting and silent transport system for Kenya's urban and rural areas. The vehicle has fuel costs at 12.5% of what a gas-powered vehicle does. This electric Tuk Tuk is meant to be an alternative to the current noisy and polluting Tuk Tuk. The company notes that the most important thing is education in the market. Often, people hear about the electronic Tuk Tuk and do not understand what it is. They are aiming to sensitize people in order to successfully introduce this new Tuk Tuk. To date, they are the only company in East Africa offering this product and are aiming to sell to the mass market.



The Electric Tuk Tuk

How they are working to beat pollution:

Dave TukTuk sells electronic Tuk Tuks that are eco-friendly and battery run, using no fuel at all. The Tuk Tuks are charged at home with a charger similar to that of a mobile phone. The company found that electricity usage was not only more environmentally friendly than fuel, but also the cheapest option. Overall, this product aids in climate action and is even slightly cheaper than a regular Tuk Tuk.

For more info visit www.davegroup.net

¹ A tuk-tuk is a motorized vehicle with three-wheels, typically used as a taxi.

- **EkoRent**

Finland

Who they are:

EkoRent's practice focuses on electric vehicles and renewable energy. Since, 2014, EkoRent has operated an all-electric vehicle fleet in Finland. They have an experienced team with knowledge of mobile technology and apps, renewable energy and electric vehicle charging systems, and perhaps most importantly, practical knowledge from running electric vehicle transport in Finland. EkoRent won the first prize in consumer cleantech category at Cleantech Venture Day 2015, and in 2016, EkoRent was awarded the honor of being one of the global WWF Climate Solver companies.

How they are working to beat pollution:

In 2018, EkoRent will be offering transport services based on electric vehicles and renewable energy in Kenya. It has been calculated that based on EkoRent's targeted market share, the carbon dioxide reduction alone could constitute 11 million tons annually. This will contribute to minimizing the transport sector's impact on the environment by working to decrease air pollution levels.

For more info visit www.ekorent.fi/en

- **LivElite Kenya Limited – Syntek Global**

Kenya

Who they are:

LivElite Kenya Limited, as representative of Syntek Global, has been working on cutting-edge green technology innovations and their newest product is an Xtreme Fuel Treatment™ which helps to reduce emissions from fossil fuels, and empowers entrepreneurs across the world to contribute positively to the environment. Known to date, they are the only company in East Africa offering this product and aim to sell to the mass market. In 2011, they won the Eco Visionary Award.

How they are working to beat pollution:

The active ingredient in Xtreme Fuel Treatment™ contains an advanced burn-rate modifier and combustion surface modifier catalyst, which, when combined with gasoline or diesel fuel, (1) increases the rate of the combustion reaction, and (2) changes the molecular surface structure of the fuel to achieve a more efficient combustion process. The result is improved fuel economy. This significantly reduces harmful green emissions by more than 33%.

For more info visit www.syntekglobal.com

- **Mobike**

China

Who they are:

Mobike is the world's first and largest smart bike-sharing company. Its mission is to bring more bikes to more cities, using its innovative technology to make cycling the most convenient and environmentally-friendly transport choice for urban residents. Using specially designed bikes equipped with GPS, Internet of Things chips and proprietary smart-lock technology, Mobike enables users of its smartphone app to find a bike near them and unlock it simply by scanning a QR code. After reaching their destination, the user parks the bike by the roadside in an authorized public parking area and locks it, automatically making the bike available to other Mobike users nearby. Within only 18 months of operation, Mobike has built globally the largest Internet of Things network of over seven million smart Mobikes, serving 150 million users across over 180 cities both in China and in seven markets abroad, providing over 25 million rides a day.



Left: Mr. Erik Solheim, Executive Director of UN Environment, riding a Mobike with; Right: Ms. Hu Weiwei, Founder of Mobike.



Left: Mr. Erik Solheim, Executive Director of UN Environment, riding a Mobike with; Right: Ms. Hu Weiwei, Founder of Mobike.

How they are working to beat pollution:

By making urban cycling more accessible, popular, and smart, Mobike is delivering scaled, sustainable mobility solutions for people and cities around the world. Enabled by its smart solution, Mobike's operation is data driven and can leverage its artificial intelligence platform to collect, analyze real-time variables and create prediction models that help further enhance operating efficiency. Mobike also actively partners with research bodies to examine urban transport issues and provide insights on innovative transport solutions and building green, sustainable cities. In the company's first year of operation, Mobike users cycled over 2.5 billion kilometers, equivalent to a reduction in CO2 emissions of more than 610,000 tons based on calculations by the World Wildlife Fund China. In June 2017, Mobike received the WWF's "Climate Solver Sustainable Urban Mobility Special Award" in recognition of the impact its innovative technology and promotion of sustainable transport.

For more info visit www.mobike.com

Air and Water

- **Elion Resources Group**

China

Who they are:

Elion is a world leading provider of solutions and services for desertification control and eco-environmental protection, upholding the vision to transform deserts into livable cities where people can enjoy a better home with green mountains and clear water. Over the past three decades, Elion has expanded its business scope from desert restoration to water treatment, soil remediation, and air pollution control, clean energy and green finance.

How they are working to beat pollution:

Eco-Elion Co. Ltd., a core business unit under the umbrella of Elion focusing on ecological restoration, including restoration of land and water resources and development of eco-towns, has developed more than 100 planting and eco-industrial technologies with 84 patents. The mission of Elion Ecology Big Data Platform is to provide comprehensive capabilities and solutions for government agencies, enterprises and people in the context of environmental protection, restoration and green development. It collects data from various channels like remote sensing, sensors, monitoring devices, Web and people interaction leveraging Internet and M2M network. The data is stored, organized, refined, analyzed in the cloud environment to provide decision-making support, daily operations and actionable insight for relevant parties. Elion Energy Co. Ltd. also focuses on clean energy, energy saving, environmental protection and energy Internet, through its dedicated efforts to build an intelligent investment and operation platform that features the combination of industry, finance and Internet to promote the efficient use of clean energy.

For more info visit www.elion.com.cn/en/

- **Heaven Springs Dynasty Harvest (Group) Limited**

China

Who they are:

Heaven Springs Dynasty Harvest (Group) has produced the world's first atmospheric water generator using zero water consumption, zero additive and zero antiseptic. The Heaven Springs Producer debuted after decades of research and development and is capable of converting air into safe drinking water. It is suitable for military, industrial and domestic uses. As the leader of the atmospheric water generation industry worldwide, the group was awarded as "Heaven Springs Dynasty Harvest Environmental Technology Innovation Model Industry Base" by China Science and Technology Innovation and Strategic Development Research Center.

How they are working to beat pollution:

The atmospheric water generator qualifies under the international highest standards of drinking water per the World Health Organization's guidelines. Heaven Springs Dynasty Harvest (Group) and its products have been recognized as "the fifth drinking water revolution maker" and "the Global leader of atmospheric water generation." Having developed a way to generate water from air, they have made a major contribution to

the global water problem. They are dedicated to the great vision of mankind, which is that “there is safe drinking water available wherever there is air.

For more info visit en.heavensprings.com

- **South Coast Science**

United Kingdom

Who they are:

South Coast Science was founded in 2016 with the specific aim of delivering high-precision, highly-connected electronic devices, data infrastructure and software in support of urban air quality monitoring. The company now offers the Praxis air quality monitoring device, measuring gas concentrations and particulate densities, and providing a live data feed over cellular networks. In addition, South Coast Science offers all of the Praxis component parts in a variety of combinations to equipment makers. The Praxis equipment is based on open source hardware and software.

How they are working to beat pollution:

Urban air quality is a local phenomenon. By reducing the cost of an accurate monitoring device and minimizing the effort to simultaneously manage large collections of devices, the Praxis device enables air quality to be monitored at many locations across a city, thereby making it possible to understand where the problems are.

For more info visit www.southcoastscience.com

- **Solvatten**

Sweden

Who they are:

Solvatten is a Swedish social enterprise that has developed a combined portable water treatment and water heater system, designed for off-grid household use in the developing world. It is an easy, innovative solution that provides access to clean, hot water to impoverished people throughout the world. Thanks to its durable simple design, Solvatten is a low-cost way to get clean, hot water. Solvatten use sunlight to heat and treat water. The product allows for more convenient ways than old habits of burning charcoal and firewood for hot and clean waste.

How they are working to #BeatPollution:

Solvatten provides a technology which uses less fire and produced less smoke when producing clean and hot water. This is a durable solution which requires does not require chemicals, electric components, or filters. Instead it uses only sunlight to produce hot and clean water.

For more info visit www.solvatten.org



Mr. Oliwer Wadstrom, Sales and Project Manager at Solvatten, showcasing Solvatten's technology

- **Vaisala**

Finland

Who they are:

Vaisala is a global leader in environmental and industrial measurement. Vaisala has established a weather and pollution monitoring network, for example in cities and industrial areas. They offer measurement instruments for key meteorological and pollution parameters as well as software for data and network management and data dissemination. The data from the networks can be used for a multitude of purposes in protecting citizens from harmful substances or natural disasters, monitoring and identifying pollution sources, or managing urban traffic.

How they are working to beat pollution:

Vaisala offers a complete range of established weather and pollution monitoring networks for example in cities and industrial areas. The offering comprises measurement instruments for key meteorological and pollution parameters as well as software for data and network management and data dissemination. Vaisala also offers full turnkey solutions for such networks including installation, commissioning and maintenance for such networks. The data from the networks can be used for a multitude of purposes in protecting citizens from harmful substances or natural disasters, monitoring and identifying pollution sources or managing urban traffic.

For more info visit www.vaisala.com

Information Technology and Big Data

- **ADEC Innovations**

Philippines

Who they are:

ADEC Innovations is an impact investing company that designs, develops and delivers a diverse data management and technology portfolio of Environmental, Social and Governance (ESG) Solutions. ADEC is a technology company that works with both the private and public sector. The company creates partnerships to help scale up operations. This can be done via software, data management, mobile apps, as well as consulting with the client to find the best options for them. ADEC has aligned themselves with the UN Sustainable Development Goals, such as for example, Goal 13: Climate Action. ADEC works to examine how technology is used for climate action through e.g. 'Metrix Tracks', which collects data from 30,000 businesses and monitors climate change patterns.



***Mr. Meelendra Singh,
Consultant at ADEC Innovations***

How they are working to beat pollution:

Ensuring sustainability and long-term financial viability is the key component of their impact investing framework. The company focuses on aggregating, organizing and giving visibility to data in order to enable client organizations' leaders and stakeholders to make informed decisions. ADEC's comprehensive suite of ESG Solutions assist organizations in minimizing environmental impacts, achieving operational efficiencies and driving long-term business growth through sustainable profitability.

For more info visit www.adec-innovations.com

- **Akvo**

Netherlands

Who they are:

Akvo is a not-for-profit foundation that helps people use data to transform international development aid. This is done by developing an open source, mobile app used by partners from various sectors. For example, this app aids in monitoring air quality and soil nutrients levels, conducts data transformation, and provides an analytical and visualization platform. The technology solution is called 'Akvo Caddisfly' and is a low-cost open-source technology consisting of hardware sensors and a software application installed on an Android-powered device that enables organizations to monitor water quality and soil nutrients in a real-time and effective manner. Akvo Caddisfly can be able to track and monitor key water contaminants and soil nutrient levels by collecting longitudinal data over a period of time. Afterwards, the data is automatically connected and transmitted to an analytical platform, 'Akvo Lumen', which provides an analytical platform where one cleans, transforms, analyses and visualizes the data so as to arrive at certain insights.

How they are working to beat pollution:

Akvo's vision is to provide simple, low-cost technology to improve monitoring and evaluation activities in sectors such as water, agriculture, energy and health. Their technologies produce insights which are related to the source of the problem and can lead to mitigate pollution of both water and soil.

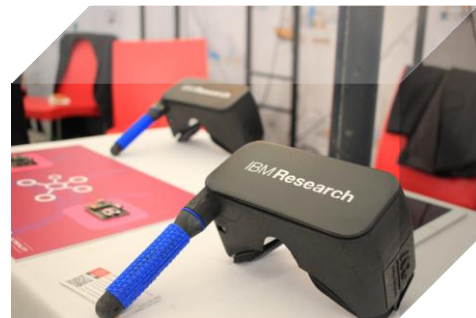
For more info visit www.akvo.org

- **IBM Research**

United States of America

Who they are:

IBM Research is a technology company that operates through five segments: Cognitive Solutions, Global Business Services (GBS), Technology Services & Cloud Platforms, Systems and Global Financing. Over the years the company has shifted its focus from hardware to software and services. IBM Research is dedicated to every client's success; innovation that matters for both the company and the world; and building trust and personal responsibility in all relationships.



IBM Research displaying Virtual Reality glasses at their Expo Booth

How they are working to beat pollution:

Rather than being simple the computer company most people think it to be, IBM Research has been working on emphasizing its focus on social impact. IBM is a big data processing company which has developed a system to analyze environmental data in order to create weather and pollution forecasts.

For more info visit www.research.ibm.com

- **Intel**

United States of America

Who they are:

Intel invents at the boundaries of technology to make amazing experiences possible for business and society, and for every person on Earth. Harnessing the capability of the cloud, the ubiquity of the Internet of Things, the latest advances in memory and programmable solutions, and the promise of always-on 5G connectivity. Intel is disrupting industries and solving global challenges. The company is leading on policy, diversity, inclusion, education, and sustainability. Intel is a company that creates value for their stockholders, customers, and society.

How they are working to beat pollution:

Intel is working on developing software which uses sensors to monitor air pollution. This will allow people to know specifically which places have higher levels of pollution. Currently Intel is working on getting these sensors out into the city of Nairobi. The company is aiming for this monitoring system to be open, transparent, and used for policy making. They want to make this data available to everyone and would ideally like to expand further to look at other industries and other forms of pollution.

For more info visit www.intel.com

- **Weibo**

China

Who they are:

Weibo is China's leading social media platform and allows people to create and distribute Chinese-language content. Weibo provides a platform for celebrities, entrepreneurs, and ordinary people to share their environmental innovations and ideas. Weibo combines the means of public self-expression in real time with a powerful platform for social interaction, as well as content aggregation and distribution. Any user can create and post a feed and attach multimedia or long-form content. User relationships on *Weibo* may be asymmetric; any user can follow any other user and add comments to a feed while reposting. The simple, asymmetric and distributed nature of Weibo allows an original feed to become a live viral conversation stream.

How this technology helps beat pollution:

As China's largest social media platform, Weibo provides channels for stars who are keen to provide environmental protection, help them get linked with environmental protection welfare institutions and then spread the idea of green public welfare to their fans, provides channels for environmental protection NGO/NPO to transmit information to the public, get public support and get funds, and provides channels for public that help them get more information of environmental protection and chances to get involved in environmental protection actions. Weibo highly raised the society's awareness of environmental protection and also motivated the society to support and devote to the environment protection. Weibo also greatly combined public environmental protection and their Internet using behavior with the power of Internet production, and truly attained the goal: you can protect the environment wherever and whenever you are, and whatever you do.

For more info visit overseas.weibo.com

Solar Power

- **2SOMOS1**

Dominican Republic

Who they are:

2SOMOS1 travels with a Solar Powered Mobile Cinema to spread Environmental Education among communities living on the Dominican Republic/Haiti border. 2SOMOS1 is a civil initiative to bring environmental education to underserved rural communities in the Dominican Republic and Haiti. Partnerships with the local governments allow them to identify the communities with environmental stress such as plastic pollution, overfishing, and illegal charcoal industry induced deforestation. Local civil society institutions and non-profits are their local partners for out-reach, dialogue, developing joint workshops and following up on the initiatives that come out of from these week-long programs in the communities.

How they are working to beat pollution:

2SOMOS1 has been working on a few different initiatives. In order for communities to access the films, they have to pay with plastic as a practical exercise to introduce collection and recycling. They are also aiming to build an open sourced plastic shredder and injection machine. The collected plastic bottles will be shredded and revalued. The objective is to explore the possibility of creating molds for solar lamps' plastic applications, as well as other construction and household plastic applications. In addition, with the help of one of their international partners, NoKero, they will soon begin distributing solar lamps to communities who do not have access to electricity, as well as educating communities on the dangers of Kerosene while building awareness around renewable resources.

For more info visit www.2SOMOS1.com

- **Sunyale**

China

Who they are:

This Company was founded in April 2014, in Nairobi. Sunyale designs and sells solar power lighting systems. Solar energy resources are inexhaustible. The amount of solar energy that reaches the earth is 6,000 times greater than the amount of energy that humans currently consume. Green environmental protection, photovoltaic power generation itself does not need fuel, no carbon dioxide emissions, do not pollute the air, do not produce noise. The application range is wide, as long as there is light, the photovoltaic power generation system can be used, and the service life is long.

How they are working to beat pollution:

They are committed to developing lower cost solar lighting products for use in remote areas and poor families. Solar power generation technology is an undischarged sustainable power supply solution that can solve the problems of household electricity and lighting in remote areas.

For more info visit 23418050.1024sj.com

Services

- **Ant Financial**

China

Who they are:

Ant Financial is a technology company that brings inclusive financial services to the world. Ant Financial, officially founded in October 2014, originated from Alipay founded in 2004. With the mission of “bring the world equal opportunities”, the company is dedicated to creating an open, shared credit system and financial services platform through technology innovations, and to provide consumers and small businesses with safe and convenient inclusive financial services globally.

How they are working to beat pollution:

Ant Financial is focused on serving small and micro enterprises, as well as individuals. Ant Financial is dedicated to bringing the world more equal opportunities through building a technology-driven open ecosystem and working with other financial institutions to support the future financial needs of society.

For more info visit global.alipay.com

- **Independent Evaluation Group – World Bank Group**

United States of America

Who they are:

The Independent Evaluation Group (IEG) is charged with assessing the activities of the World Bank Group. IEG operates as an independent unit within the World Bank Group and reports directly to the Board of Directors. Through its evaluations, IEG is able to influence the World Bank Group’s development outcomes by providing independent and impartial, evidence-based assessments and lessons on drivers of success and failure. Between 2004 and 2017, the World Bank Group committed \$43 billion in financial support to 534 pollution-relevant projects in over 100 countries.

How they are working to beat pollution:

A new report was recently released by the Independent Evaluation Group assesses the extent to which these projects have been effective in helping developing countries address the growing pollution challenge. The report, “Toward a Clean World for All”, is the first comprehensive assessment of the World Bank Group’s pollution management efforts. It illustrates where countries are making progress, and identifies gaps and opportunities for policymakers, the private sector, and multilateral development institutions such as the World Bank Group.

For more info visit www.ieg.worldbank.org



Mr. Javier Lanza Ferrera, Technical Consultant, presenting the work of the Independent Evaluation Group – World Bank Group

- **Phoenix Design Aid**

Denmark

Who they are:

Phoenix Design Aid is an international design and communication company with expertise in total graphics and digital solutions. Phoenix Design Aid is a full-service provider and offers a variety of professional management. They work to create new and visionary solutions in collaboration with clients.

How they are working to beat pollution:

One of their core values is to minimize their environmental impact, and being a global player they recognize their obligations to set high sustainability standards and promote sound business practices and community development. Their goal is to promote clean technology in order to reduce the impacts of pollution, encourage the sustainable use of resources, and work to adjust their practices to take environmental protection, climate change, and animal welfare into account.

For more info visit www.phoenixdesignaid.com

- **Safaricom**

Kenya

Who they are:

Safaricom is a leading communications company in Kenya with the widest and strongest coverage. The home of the famous mobile money service, M-PESA, and a leading innovator in mobile service. Along with its partners, Safaricom showcased solar solutions, integrated solid waste management and e-waste management, at the 2017 Sustainable Innovation Expo.

How they are working to beat pollution:

One of their partners, the Waste Electrical and Electronic Equipment Centre (WEEE Centre), offers the service of awareness creation (training) and safe disposal of electrical and electronic waste (e-Waste) in accordance with National Environmental Management Association (NEMA) waste regulations and WEEE Centre regulations that is protective to both the environment and public health. As a fundamental core value, The WEEE Centre runs an environmentally friendly operation. They are committed to the efficient, safe and conservative disposal of electrical and electronic waste. The WEEE Centre e-Waste management processes entail secure data destruction, IT asset recovery and reuse, and e-waste recycling and re-export. Both metals and plastics derived from decommissioned computers and parts of the same are recycled locally, while functional electronic parts and components are reused. Decommissioned parts that cannot be recycled or reused are re- shipped overseas to various partners who have the capacity and capability to safely dispose of them. Their other partner, M-KOPA, is working to make solar power available to everyone, including off-grid households. The company has already connected over 500,000 homes to affordable solar power with 500 new homes being added every day. Current customers will make projected savings of US \$ 375 million over the next four years.

For more info visit www.safaricom.co.ke , <http://www.m-kopa.com> , and www.weeecentre.com

- **Thomson Reuters**

United Kingdom

Who they are:

Thomson Reuters is an international news agency providing society with the news it needs to be free, prosperous and informed. They strive to preserve independence, integrity and freedom from bias in the gathering and dissemination of information and news. Thomson Reuters has been working on enhancing their Environmental, Social and Corporate Governance (ESG) research capabilities through a flagship project, Eikon. Thomson Reuters has an interest in discussing topics of land rights systems and data, transparency on key political and economic events, background and value chain integrity checks, financial risk and commodity data to fuel global markets, and transparency on non-state actor leadership.

How they are working to beat pollution:

Thomson Reuters believes that integrating sustainability into business is a key factor to achieving long term economic prosperity. At the Expo, Thomson Reuters collected information from delegates regarding why sustainability matters to them and their business and how they are integrating it into their business models.

For more info visit blogs.thomsonreuters.com/sustainability/

Business France

France

Business France is France's national agency supporting the international development of the national economy, responsible for fostering export growth by French businesses, as well as promoting and facilitating international investment in France. It promotes France's companies, business image and nationwide attractiveness as an investment location through the *Creative France* campaign, and also runs the VIE international internship program. Business France East Africa supports French companies to find local partners in Tanzania, Kenya, Ethiopia and Uganda. Business France attended the *Expo* with a group of French companies working in a range of areas including solar, water, biogas, industry, and business.



French Minister of Environment, H.E. Nicolas Hulot, speaking with participants of the Expo

For more info visit www.businessfrance.fr

- **ARMOR**

Who they are:

Founded nearly 100 years ago, ARMOR has always shown the ability to redefine itself throughout its history. From carbon paper to thermal transfer – a technology in which ARMOR is currently the world leader – to ASCA© third-generation photovoltaic films, the objective remains the same: to keep in step with technological developments by looking to the future, to energy transition and the protection of the planet.

How they are working to beat pollution:

The launching of a new range of corporate gifts incorporating ASCA© film is carried out simultaneously with the industrial-scale production of photovoltaic film launched in late 2016. The Beautiful Light Factory is the ARMOR group entity in charge of making solar energy available to everyone by promoting new uses via innovative applications.

For more info visit www.armor-group.com

- **CIRAD**

Who they are:

CIRAD is the French agricultural research and international cooperation organization working for the sustainable development of tropical and Mediterranean regions. CIRAD has a global network of research and training platforms in partnership and regional offices, through which it works hand in hand with more than 100 countries.

How they are working to beat pollution:

With its partnering countries, CIRAD works to generate new knowledge, support agricultural development, and contribute to the debate on the main global issues concerning agriculture, food and rural territories.

For more info visit www.cirad.fr

- **COHIN ENVIRONNEMENT**

Who they are:

COHIN ENVIRONNEMENT is a designer and manufacturer of a wastewater treatment plant suitable for urban and industrial sectors. It offers various services and products: Design and production: COHIN ENVIRONNEMENT offers turnkey installations from design to commissioning, through installation and staff training. They give special attention to design units reliable, ergonomic and respectful of the environment. For more info visit www.cohin-environnement.com

How they are working to beat pollution:

COHIN ENVIRONNEMENT, known as a Leading Innovative Company, has developed a fully biological treatment plant, “UNIBIOCELL process”, located in a single basin. The next step was the development of a wide range of waste water boxes, from to 40' container to wood or composite solution. It allows them to provide modular and expendable disposal to bring solution to the variations of effluents flow to treat.

- **EVERGAZ**

Who they are:

EVERGAZ is a biogas plants operator active in France, Germany and Belgium. The company was founded in 2008 and progressively became a major player in the biogas market. The company expertise covers all aspects of anaerobic digestion projects, from feasibility studies to project development, investment and day-to-day plant operations. With 7 plants in operations in 3 European countries, EVERGAZ benefits from day-to-day operational experience that continuously feed reflections and updates on new projects development. EVERGAZ can treat more than 1200 waste types, thanks to a dedicated database regularly updated since the company creation.

How they are working to beat pollution:

EVERGAZ activity is sustainable and responds to the need for organic waste recycling, that includes agricultural, industrial (food industry) and municipal waste types. EVERGAZ biogas plants provide a fully sustainable solution. Biogas plants simultaneously treat organic waste and produce green energy, and natural fertilizer. Biogas solutions are always developed in partnership with local stakeholders – famers, industrials, local governments – to respond to their needs, often driven by their corporate social responsibility and growing environmental regulation.

For more info visit www.evergaz.com

- **IRD**

Who they are:

The IRD - French National Research Institute for Sustainable Development - is a key French player on the international development agenda. It works based on equitable scientific partnership with developing countries, primarily in the intertropical region and the Mediterranean area. This allows to design solutions which are adapted to the challenges that humans and the planet are facing: pandemics, climate and environmental change, humanitarian and political crises.

How they are working to beat pollution:

Essential support for public policies combining the fight against pollution and the fight against poverty, IRD supports long-term environment observatories enabling to clarify the uncertainties about pollution and its health impacts. IRD provides diagnosis, monitoring and quantification of pollution, flow modeling, impact assessment, development of alert systems, identification on of solutions and development of technological innovations, including the valuable know-how of artisanal recycling economy.

For more info visit www.ird.fr

- **Naskeo Environnement**

Who they are:

Naskeo is a turnkey biogas plants construction company. They carry out the development, design, construction and maintenance of biogas plants. Founded 12 years ago, Naskeo is a leader on the French market. Naskeo's technologies are adapted to any feedstocks: manure, farming by-products, agro food industry wastes, organic household wastes, human wastes, green wastes, sludge, etc.

How they are working to beat pollution:

Naskeo builds partnerships with farmers, industrials and project developers to treat organic wastes by producing biogas. They offer every type of biogas valorization, such as electricity production with CHP unit, biomethane production with an upgrading unit, gas bottling combined with an upgrading unit, or heat production with a boiler.

For more info visit www.naskeo.com/en

- **Schneider Electric**

Who they are:

Schneider Electric is the global specialist in energy management and automation. Over 160,000 employees serve customers in over 100 countries, helping them to manage their energy and process in ways that are safe, reliable, efficient and sustainable. From the simplest of switches to complex operational systems, their technology, software and services improve the way their customers manage and automate their operations. Their connected technologies reshape industries, transform cities and enrich lives.

How they are working to beat pollution:

The main challenge is to provide electricity access to everyone. This is a human right and a key factor in protecting economic development as it supports: 1) Access to Education, 2) increased productivity of entrepreneurs and farmers, 3) improvement in health and quality of life. Today 70% of the population in East Africa does not have access to electricity. Simple and affordable technical solutions exist, from solar lamps to decentralized microgrids. Schneider Electric is committed to promoting sustainable development and providing safe and clean access to energy. In the past 6 years, Schneider Electric has contributed to providing 5 million people with access to energy. The goal is to reach 50 million people within the next 10 years.

For more info visit www.schneider-electric.com

SWITCH Africa Green



The SWITCH Africa Green Expo Booths

SWITCH Africa Green is funded by the European Union and implemented by UN Environment in collaboration with United Nations Development Programme and United Nations Office for Project Services. The SWITCH Africa Green project supports six countries in Africa - Burkina Faso, Ghana, Kenya, Mauritius, South Africa and Uganda - to achieve sustainable development by engaging in the transition towards an inclusive green economy based on sustainable consumption and production (SCP) patterns. It focuses on selected sectors: agriculture, integrated waste management, manufacturing and tourism.

As part of supporting the development of green business in Africa, SWITCH Africa Green enabled 34 grantees to access grants of over USD 11.5 million to ensure that the Micro, Small and Medium Enterprises (MSMEs) develop knowledge to implement green business within the context of sustainable consumption and production practices and patterns. The grantees developed toolkits to train and develop capacities of the MSMEs on key areas such as water efficiency, energy efficiency, labeling and standards, eco-innovation and sustainable business practices. The support provided through the grantees has been extended to over 3000 MSMEs.

SWITCH Africa Green supports the exchange of knowledge and good practices not only among the countries, the grantees and MSMEs of the project but also regionally and globally. Twelve MSMEs recently participated in the sustainable innovation exhibition during the third United Nations Assembly (UNEA-3). Exhibitors were visited by the President of the UN General Assembly H.E. Miroslav Lajčák and received words of encouragement from the President who said: *“I appreciate your creativity, congratulations, you are leading, I think the world should follow you.”*



Technology Displayed at the SWITCH Africa Green Expo Booths

For more info about Switch Africa Green and its below projects, please visit www.switchafricagreen.org/index.php?lang=en

- **Alebere Child Mothers**

Uganda

Who they are:

This refugee community-based organization uses the resources around their communities, including animal waste and plant material, to make pesticides and fertilizers. The group also hires out labour to community members in their gardens as a source of income.

How they are working to beat pollution:

Alebere Child Mothers shares organic agricultural practices that can be accessed and afforded by smallholder farmers. They use local resources to make natural agricultural products and promote the importance of organic farming practices.

- **Association Youth Solidarity for True Development (AJSDV)**

Burkina Faso

Who they are:

This is an association of young people who are committed to promoting the importance of development by taking action to preserve the environment for present and future generations. They are currently working on a project to transform household waste into agricultural fertilizer. They are also strengthening the capacities of the actors in the recovery of waste, the preservation of biodiversity, and the efficiency of resources in agriculture.

How they are working to beat pollution:

Through SWITCH Africa Green and Association Youth Solidarity for True Development implements the project "Transformation of household waste into agricultural fertilizer in northern Burkina". The project has developed several innovations in waste recovery have been developed. It is also active in awareness raising and communication on sustainable lifestyles.

- **Biogas Association of Ghana (BAG)**

Ghana

Who they are:

The Biogas Association of Ghana (BAG) is an association of biogas technologies service providers formed in July 2016, through the SWITCH Africa Green project, as an advocacy group for the technology delivery in Ghana. BAG's core objectives for collaborative strategies are: a) bringing together key actors in the sector to share ideas on ways of promoting sanitation and the adoption of biogas technology in the domestic, institutional and industrial sectors; b) support the development of quality standards in the industry; c) encourage and support research in biogas technology; d) building capacity of practitioners in the sector in areas such as sanitation, agriculture, business development, quality standards and energy, and; e) engaging donors for increased support to businesses, technologies and trainers in the technology.

How they are working to beat pollution:

The Biogas Association of Ghana believes in biogas technology as having the most sustainable solutions to Africa's environmental, waste, sanitation, energy and agricultural challenges. With support from UN

Environment through SWITCH Africa Green, this group has successfully eliminated the pink ball worms in their farms in August 2016 using organic pesticide, compared to the previous year when the entire crop was lost. They are working to share their organic agricultural practices as they can be accessed and afforded by smallholder farmers. Their technology will help reduce levels of land and water pollution.

- **Biogas Technologies Africa Ltd. (BTAL)**

Ghana

Who they are:

Biogas Technologies Africa Ltd. has been very active in the provision of Anaerobic Digestion Systems (ADS), which are waste to energy plants implemented in various African countries. Their services and provisions extend to the Health Sectors, Educational Sectors, Real Estates, Agricultural Sectors (Agro-processing and animal husbandry, poultry farms and piggeries), Hotel Facilities, Industries and Factories, Abattoirs and the general public. BTAL has installed in-operation Biogas Plants in many of their locations.

How they are working to beat pollution:

Methane, which is more damaging than carbon dioxide, is the main product of organic wastes inundating African cities. Biogas technology provides the best means of capturing and using methane treatment systems to correct the inappropriate disposal of sewage/fecal matter, organic municipal solid waste and bio-medical waste types which contributes significantly to global warming while also providing cheap, reliable and secure energy for low income groups. There would be many benefits in the replication of this waste-to-energy technology to help solve Africa's waste management problem whilst promoting sustainable economic returns on waste-to-energy investment.

- **City Waste Recycling Company Ltd (CWR)**

Ghana

Who they are:

City Waste Recycling Company Ltd was established in Ghana due to the growing prevalence of e-waste, as well as the manual dismantling of hazardous wastes. The company works on sourcing, and responsibly processing, various types of waste. City Waste Recycling Company Ltd recycles waste ranging from e-waste, such as refrigerators and batteries to sawdust and plastic, which it sources from local industries and waste collectors in Ghana. From this waste, the company generates products such as plastic pellets, printed circuit boards, saw-dust briquettes, and exports recycled e-waste products.

How they are working to beat pollution:

The City Waste Recycling Company Ltd is working on converting waste into resources through environmentally sound recycling in secondary raw materials recovery. They are turning environmental challenges into economic opportunities and contributing to a Green Economy as well as replicating their work in other African countries bearing in mind the Triple Bottom Line Approach. Their recycling efforts have resulted in protecting the ozone layer from absorbing toxic gases from more than 20,000 refrigerators over the past three years. The company provides formal green jobs and health insurance for 500 waste collectors who, formerly were only able to work in the informal sector. Its waste collection suppliers include another 500 people from the informal sector, who through this company are provided with regular income, health insurance and a pension scheme.

- **Commission for Environment**

Mauritius

Who they are:

The Commission for Environment works to plan and coordinate the implementation of training activities for entrepreneurs regarding how to start and run a green business. They displayed green and innovation local products produced by various companies.

How they are working to beat pollution:

The Commission for Environment is working on the production of an array of innovative products such as local non-wheat flours, local chips, jewelry from plant materials, and local bags and baskets, which all contribute to the alleviation of poverty. Their goal is to allow people to earn a living while also reducing wastes. They use recycled materials to make bags and clothing, which helps to reduce waste and garbage pollution.

- **Groupe de Recherche et d'Analyse Appliquées pour le Développement (GRAAD Burkina)**

Burkina Faso

Who they are:

GRAAD Burkina is a strategic research and analysis for action (R4D) non-governmental organization created in 2010. Its objective is to produce relevant knowledge for policy decision making in Burkina Faso. It works in the three main areas of green economy, rural development, and youth employment.

How they are working to beat pollution:

GRAAD Burkina provides information about low cost composting, good practices for micro-enterprises, what the costs of bad chemical product waste use in the agricultural sector are, impacts of plastic bag use, the main factors causing lack of sanitation in cities, and make products out of recycled materials. They conduct research, capacity building, offer support and advice, produce knowledge, and design and manage projects in the domains of green economy, rural development, and youth employment.

- **Ghana National Cleaner Production Centre (GNCPC)**

Ghana

Who they are:

Ghana National Cleaner Production Centre was established in 2012. The Centre implemented RECP projects and has helped in introducing innovative technologies in the RECP implementation for wastes, water, energy, and chemicals as well as promoting renewable energy solutions to mitigate Climate Change. Ghana National Cleaner Production Centre is a SWITCH Africa Green grantee that has initiated and trained artisans in the biogas construction technologies and has brought together the practitioners into the Biogas Association of Ghana as an advocacy group for biogas and renewable energy technologies. The Centre is also promoting industrial symbiosis in small and medium enterprises as well as leading the crusade in turning E-Waste menace into value-chain green businesses.

How they are working to beat pollution:

The Ghana National Cleaner Production Centre is working to promote biogas technologies as they see these to be the fastest means of solving Africa's waste management and energy crisis.

- **Muliru Enterprises**

Kenya

Who they are:

Muliru Enterprises is a community-based enterprise which works to engage in commercial cultivation of indigenous medicinal plants, processing plant leaves into essential oil and crystals, to be used in the production of natural value-added products. Muliru Enterprises has trained 20 youth to undertake the drying, distillation and separation of the oil and crystals within their enterprise. Muliru Enterprises has mobilized and trained over 800 members of the community living adjacent to Kakamega forest to domesticate and cultivate *Ocimum kilimandscharicum*² and *Mondia whytei* roots on a commercial basis, as sources of raw material for manufacture of Naturub® and Mondia Tonic® products.

How they are working to beat pollution:

The Kakamega forest is highly threatened largely due to economic and human population pressure. The forest is characterized by high human population densities around them. Due to the high levels of poverty, communities who live adjacent to these forests depend on forest resources for their daily needs and income that is derived from various forest products such as timber, fuel wood, herbal medicines and building materials. This has led to destruction of the forests and biodiversity therein. In order to address the problem of destruction of Kakamega forest, the International Centre for Insect Physiology and Ecology (icipe) and its partners are assisting members of the communities who live adjacent to the forest to undertake income-generating enterprises that are based on two indigenous medicinal plants, *Ocimum kilimandscharicum* and *Mondia whytei* root. Muliru Enterprises has been participating in these projects.

- **Palm Prints African Artifacts**

Kenya

Who they are:

Palm Prints has been using environment friendly leathers, ensuring that they are vegetable tanned and safe for customer use and for the environment. Their products are supplied to companies all over the world. They supply goods to tourism boutiques, safari hotels, and also export to countries such as the USA, South Africa and Namibia.

How they are working to beat pollution:

Palm Prints is working on waste reduction by using waste from their production to create articles such as key holders and bracelets. They use environmentally friendly materials and supplied when producing leather items and are making sure products are not environmentally damaging. This reduces waste pollution while also helping them to increase their own efficiency and profit.

² This is a basil species native to Kenya.

- **Skyfat Tannery Company Ltd**

Uganda

Who they are:

Skyfat Tannery Company Ltd deals in the tanning of raw hides into wet blue leather for export. It deals in the buying of cow hides and goats skins which it processes into wet blue leather for export to outside markets. The factory has the capacity to process over 60 tons of hides and skins into wet blue leather per day. Skyfat *Tannery* emphasis on industrial symbiosis throughout its operations and is working towards achieving a pollution free leather processing system.

How they are working to beat pollution:

Skyfat Tannery Company Ltd is committed to generating zero waste and have been working to add more green manufacturing practices in order to benefit the environment. The company's environmental policy is to create a closed loop system of leather processing to eliminate waste production. It has adopted a number of green manufacturing practices especially in solid waste management which are resulting in environmental, economic, and social benefits.

- **Vulpec Company Limited (VCL)**

Ghana

Who they are:

Vulpec Company Limited emerged from an incredible sense of indigenous Ghanaian creativity and entrepreneurship with efforts, commitments and investments directed at solving socio-economic, business and other critical challenges through the development of concepts, business and projects. The company provides innovative solutions to the mounting of environmental, water, sanitation and hygiene (WASH); renewable energy, housing and engineering needs for the West-African Sub-region.

How they are working to beat pollution:

Vulpec Company Limited has been working to produce sustainable energy through thermoelectricity and biogas production. Vulpec is delivering on renewable energy with emphasis on waste-to-energy (biogas and biomass) and the Ecosafe Energy Stove. With Biogas, SWITCH Africa Green, through the Ghana National Cleaner Production Centre, is thrilled by Vulpec's ability to convert existing septic tanks to biodigesters to produce methane gas for cooking and hence deploying it in huge numbers for households in Ghana. This stops the emission of Methane directly whilst reducing the dependence on the carbon sinks (forest) for energy. The stove converts excess heat to electricity that can be stored and used as and when needed, while also not producing smoke during the cooking process which reduces cardiovascular diseases and eye infections amongst rural and urban poor women.



