SOLUTION CATALOGUE

# UNLEASH

A GLOBAL INNOVATION LAB FOR THE UN SUSTAINABLE DEVELOPMENTS GOALS

*Winners*

## EXECUTION PARTNERS

CARISBERG FOUNDATION · Deloitte. · Dalberg

Confederation of Danish Industry · PART OF Højskolerne · UNDP Empowered lives. Resilient nations.

UNLEASH · THE GLOBAL GOALS For Sustainable Development

All solutions presented in this catalogue were developed by teams of talents during the UNLEASH Innovation Lab 2017 in Denmark.
All teams are responsible for the content and correct description of their solution and have agreed to have their solutions published by UNLEASH.



# CONTENT



**www.unleash.org**

## INTRODUCTION TO THE UNLEASH INNOVATION LAB

On the 25th of September 2015, the 193 member states of the UN General Assembly adopted the 2030 Development Agenda titled “Transforming our world: the 2030 Agenda for Sustainable Development”. The agenda comprises the Sustainable Development Goals (SDGs) or the Global Goals, consisting of 17 goals and 169 targets aiming to make the planet a more sustainable place.

The SDGs were adopted after the Millennium Development Goals, which were eight goals to be reached by 2015. While the Millennium Development Goals were mostly designed to improve life in developing countries, the SDGs are designed to “leave no one behind”, which means that the targets should be met by all member states, no matter their economic, social or environmental position.

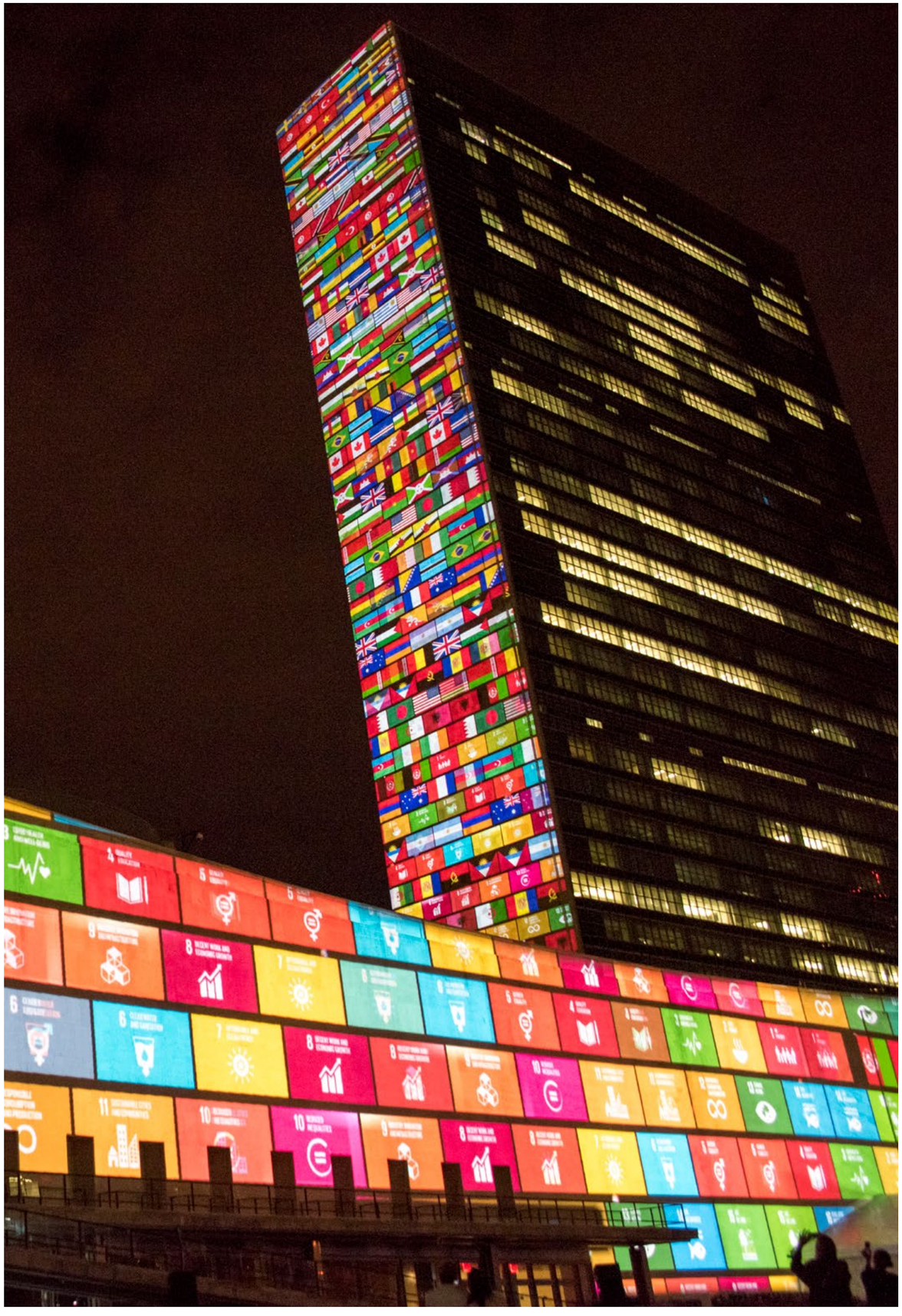
The 2030-Agenda is the largest global partnership agreement and development plan for the planet ever made. The goals ultimately aspire to create a better, more inclusive and more prosperous world by 2030.

UNLEASH is a new, global initiative that brings together 1,000 young academics, intrapreneurs, entrepreneurs and tech experts annually. Each year they will be tasked with developing innovative and practical solutions to the UN 17 Sustainable Development Goals (SDGs).

The first UNLEASH took place in Denmark, in three main locations; Copenhagen, Folk High Schools in the country side, and Aarhus. The talents worked in teams and were taken through an Innovation Process where they co-created the solutions found in this catalogue.

UNLEASH Lab 2017 worked with seven themes that relate to the SDGs: Education & ICT, Energy, Health, Food, Sustainable Consumption & Production, Urban Sustainability, and Water.

THE GLOBAL GOALS
For Sustainable Development



# Special awards

Most Impact Potential

# SmartWrapr

## Reusable Smart Pallet Wrapping

**Shrink wrap is one of the largest hidden pollutants in the world. In the United States, there are over 2 billion pallets which causes 1.0 billion pounds of petroleum waste, which 95% is expected to end up in landfills. We have developed a reuseable smart pallet cover to replace plastic shrink wrap. We can reduce the cost to customers for pallet wrapping from $1.20 to $0.60 per use and reduce environmental impact by 50% in plastic waste, 95% of petroleum use, and 80% of CO2 emissions.**

### REQUESTS FOR NEXT STEPS

1. Help with fundraising or investment
2. Access to legal and accounting resources
3. Access to corporate partners

### CONTACT

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Twitter: @SmartWrapr

### PROBLEM

There are 2 billion pallets in use today in the United States. Increasing consumption and global standards for transportation operations will further increase demand for pallets used to transport goods.

For each pallet transported, single-use shrink/stretch wrap is used to secure stacked cartons/boxes to prevent falling packages.

This not only represents significant one-time financial cost, but high environmental waste with little recyclability.

In the US, $3.0B dollars are spent each year on shrink warp with projected growth of 5% annually. This results in 1.0B pounds of petroleum based resin used in manufacturing, 77M pounds of wasted materials (95% is expected to end up in landfills), 450M kg of CO2.

### SOLUTION

We have created a reuseable smart pallet cover to replace plastic shrink wrap.

We will use stretchable lycra (i.e. the material in performance swimwear) with threaded ropes integrated through a handle/cinch to tighten around the pallet and ensure a secure fitting around stacked cartons/boxes in the pallet.

Product dimensions (H,W,L) are typically 1.2 x 1.2 x 1.0m which is flexible to meet 80% of global pallet dimensions.

Our per unit costs are $70 with the opportunity for 40% cost reduction with scale. Studies have shown our fabric can be durable for over 200 reuses. Accounting for reuse, our smart cover production costs are $0.35 per use compared to $1.20 cost for shrink wrap. This implies a final retail price of up to $240 for parity to shrink wrap.

Our cover is designed to be compacted to ensure better product recovery.

By cooperating with companies who reuse pallets, reusable wraps can be recovered with little additional transportation cost, labor, or training.

Most Impact Potential

## INNOVATION

Other shrink wrapping alternatives exist in the market and have seen little adoption because of retail costs are $150 per unit. Though rated for up to 1,000 reuses, their high upfront cost coupled with inconsistent recovery processes mean companies have difficulty realizing full cost savings.

Our difference is a lower retail cost at an estimated $120 per unit with better usability to ensure adoption.

Furthermore, by integrating a technology into a tightening mechanism, we can transform shrink wrapping from purely a cost center to an opportunity for cost savings, security, and product protection.

There can be tracking and analytics at the pallet level, security monitoring for pallet contents and notification of potential tampering and theft.

Padded can reduce carton damage, subsequent repackaging, and final product damage.

## IMPACT

Integrating financial and environmental impact will be key to ensuring adoption. On a cost to customers per unit expenses, we estimate that companies will save $0.60 per pallet wrapping with our solution. For a logistics companies like DHL and Kuehne + Nagel who collectively utilize 18M pallets per year, our pallet cover will save $7M per company per year. For retailers like Walmart and Target, this will save $13M per company annually.

We impact SDG 12-5, reducing waste. We estimate each cover will result in a net reduction of 1.67 lbs of plastic materials into landfills, save 95% of oil consumption, and 80% of CO2 emissions.

Transportation companies like DHL will be able to save 167,000 lbs of plastic, 20,000 barrels of oil, 1.8M kg of CO2 emissions.

Retailers like Walmart would save 300,000 lbs of plastic, 36,000 barrels of oil, 3.3M kg of CO2 emissions. Walmart‘s numbers are equivalent to 16 elephants of plastic, 60M km driven in a car, and 11 households shifting to solar panels.

## NEXT STEPS

We estimate we will have product, tested project implementation, and scalable production ready within 8-10 months of completing UNLEASH.

Our first step is to work with a product designer to move our prototype to MVP. We estimate this will take 8-12 weeks to iterate create a finalized design for mass production.

Our next step is our first production run in China for 1,000 units. It will take 2-3 weeks from sending the product specification to receiving final smartcovers for field testing. Working with our first client, CHEP or Kuehne + Nagel to test scaled use.

We will receive data on product use and operations within the first day for inter-city local transport operations and 3 days for cross-country transit.

We will run a 4-month pilot to understand the full durability for our estimated product life of 200 uses.

## GEOGRAPHY

SmartWrapr is headquarted in Copenhagen to work closely with UNLEASH and local partners. Product sales and distribution will be focused in the United States (Los Angeles or ) and Europe (Copenhagen) first.

The founding team lives in Germany, Sweden, South Africa, Hong Kong and Japan.


UNLEASH
– PRESENTED
#UNLEASHLAB2017

Best Prototype

# Virtual Reality Assisted Curriculum for Refugee Integration

**We can have a larger and faster impact on the SDGs' achievement by focusing on youth in developed countries who will, in 2030, have large amounts of political clout and power to influence global policies. Through a virtual reality (VR) assisted curriculum for refugee, migrant, and immigrant integration in secondary schools, we can help increase empathy and multicultural understanding among the leaders of tomorrow, and decrease prejudice and localized violence today.**

## REQUESTS FOR NEXT STEPS

1. Advice / feedback – technical advice
2. Access to corporate partners
3. Advice / feedback – business plan

## CONTACT

educationteam21@team.unleash.org

## PROBLEM

Students (14-17 years old) in migrant-hosting countries need to increase exposure to, comprehend, and empathize with people of different cultures. This is especially important for recent immigrant groups in order to reduce conflict and inequality.

There are 65.6 million forcibly displaced people worldwide today, and this number is only expected to increase. Many of these people are traveling to developed countries across Europe; this wave of migrants has sparked pushback, waves of prejudice, hate, and nationalist sentiment.

This problem is especially apparent with Syrian refugees settling in Germany (our pilot country and migrant group).

Teachers often lack access to sufficient materials about increasing empathy and knowledge about recent immigrant groups and thus, classrooms do not see this vital content.

## SOLUTION

We are devising VR content coupled with a short curriculum about life in Syria, facilitation discussion questions and creative activities.

The four VR short clips, totaling three to four minutes, will take the students in Germany virtually to:

1. A refugee camp at the Jordanian border,
2. Syria as a thriving entrepreneurial and innovation center,
3. A traditional Syrian dance, and
4. The rubber dingy used so often to transport Syrian refugees.

Our pilot project focuses on Syrian refugees in Germany, the country accepting the most asylum- seeking displaced persons. This project can be scaled to other host-countries and immigrant groups.

Both Labster in Copenhagen and Stanford University have demonstrated that VR in conjunction with traditional classroom learning can increase learning, and our pilot study can provide data generated by our curricula to the company that donates 250 VR headsets to further provide insights on this correlation.

Best Protoype

## INNOVATION

Lack of coordination and implementation models have prevented this solution from being successfully implemented. VR headsets are a relatively new technology, and few studies have been done to demonstrate their effect on learning, such as those by Labster, Stanford University's Virtual Human Interaction Lab, and the Tarrant Institute for Innovative Education, and our data from Germany will add value to the current studies. A possible competition between our donors could emerge to our benefit.

While VR-empathy learning has been used locally in Vermont, in New York, by Nearpod Education, and at some United Nations' events, it has not been done and documented on a wide scale. The International Rescue Committee (IRC) provides a similar VR-assisted curriculum, but do not provide the VR headsets and personalized support. Finally, the IRC's curriculum exclusively focuses on Syria, we adapt the curriculum to the migrant groups in a certain place.

## IMPACT

We are aiming to create impact in three different ways:

1. Engender empathetic global leaders of the future.
2. Catalyze our future leaders, adept in empathy and affective learning, to create impact with their decision-making power to meet the SDGs by 2030.
3. Generate authentic data to produce valuable research on the effective use of VR in empathy education.

## NEXT STEPS

We are all very committed to advancing our project because we are passionate and the feedback we have received from our mentors, facilitators, and colleagues was so positive.

At UNLEASH, we spoke to partners at Deloitte and Khan Academy who are excited about this project.

## GEOGRAPHY

One team member is located in Damascus, Syria. Her location is especially vital in order to gain authentic footage from Syria to use in the VR headset. Another team member is currently in Boston (United States), but will be moving to Panama from this October to July 2018. One team member is based in Singapore. Our proposed pilot project is in Germany; however, none of us have experience in German education, making this pilot difficult. We need to either change the pilot location or have another team member from Germany/EU join.


UNLEASH AWARDS SHOW
– PRESENTED BY BESTSELLER
#UNLEASHLAB2017

Most Collaborative Team

# Farmazon

**Farmazon is an e-commerce platform that aims at reducing inefficiencies in agricultural value chains by linking smallholder farmers to buyers, agricultural advisers, input suppliers and transport providers. It is unique for info-knowledge facilitation at community level. The business will sustain itself through subscription and transaction fees and by selling data to donors and governments. We are a diverse group of young entrepreneurs with an extensive network of smallholder farmers in Kenya and other parts of the world. After piloting in Kenya, we aim at scaling up to other countries.**

## REQUESTS FOR NEXT STEPS

1. Help with fundraising or investment
2. Access to legal and accounting resources
3. Access to corporate partners

## CONTACT

foodteam24@team.unleash.org

## PROBLEM

Across Africa, South America and Asia, smallholder families are struggling to make more productive use of their farmland. Most are currently unable to produce enough to feed their families an adequate nutritional diet, or to sell in the market and generate sufficient income.

The unattractiveness of the sector coupled with population growth leads the youth to abandon rural areas in quest for income opportunities in cities.

The World Bank estimates that Africa alone has the potential to create a trillion dollar food market by 2030, if African farmers can increase their productivity and link to the formal markets.

Over the last 10 years, development programmes have increasingly been adopting a 'value chain' approach, which addresses the full range of actors from producers to consumers.

Despite these efforts, gaps in agronomic and market information are still causing serious value chain inefficiencies, leading smallholders and other actors in the value chain to miss income opportunities.

## SOLUTION

By overcoming the communication barriers along the agricultural production and supply value chains the power of ICT is leveraged to empower farmers and jumpstart rural commerce to tackle poverty and address food security.

Farmazon is a modular e-commerce platform designed for smallholder agricultural communities in the developing world.

The platform facilitates information exchange and trading between agricultural producers, buyers, village agriculture consultants, input and service companies and, storage and logistics providers through the use of smart phones and/or mobile phones.

We will work with groups of farmers, meaning that not all farmers need to own an internet-enabled phone to be able to benefit from the platform.

Most Collaborative Team

## INNOVATION

Flexible delivery mechanisms:
A flexible platform enables Farmazon to be accessed by greater than 80% of the population.

Self-selection and evaluation:
In order to build confidence into the platform user profiles are created that include peer-review evaluation systems, similar to those employed by Ebay.

Integration across the value-chain:
Existing systems principally focus on the facilitation of sales, yet value chain facilitation is needed to enable these communities to thrive. Critical links in the chain include agronomic extension, access to farm inputs and logistics.

The power of connectivity:
Facebook, Ebay, and Amazon have clearly demonstrated that connecting various people who share similar interests can change the world.

Bargaining:
In many rural market systems, the process of supply and demand agreements has broken down due to the various distortions introduced through multiple layers of middle-men.

## IMPACT

Our solution will contribute to SDG target 2.3.2 by increasing income of small-scale food producers, majority of whom are women.

The Bill and Melinda Gates Foundation Agricultural Development strategy cites that participatory and customized rural advisory services, can drive 30-40% productivity gains and technology enabled market linkages can translate those productivity gains to 50-60% increase in income.

With capacity building (with a climate smart focus) and market linkages that Farmazon facilitates we will help transform smallholders into self-sufficient small businesses and boost rural economies.

Over the 24-month pilot phase in the Kenya horticulture sector we aim to impact 300,000 farmers in the first year and grow this to 1,000,000 by the end of the second year.

Across the globe 500 million smallholders exist, we home Farmazon will positively impact the lives of those who use it.

## NEXT STEPS

Pilot financing:
Start-up capital is required to translate ideas into scaleable businesses. We would like to be linked to the UNLEASH network of actors and firms willing to invest in innovative business concepts.

Connections to the ICT community:
For our solution to be viable we have to have access to human resources with skills in the technology sphere. We would like to be linked with the UNLEASH community who have expertise in developing technology systems and platforms in the developing world.

Structure:
Set up a company in neutral territory with tax friendly laws for startups e.g Mauritius, that we all own, that develops the platform and licenses it to different companies that implement the solution in various countries.

The other option involves setting up a company and original founders sitting as directors and a CEO is hired along with the operational team.

Fundraising:
Farmazon plans to raise $300,000-500,000 to operationalize its solution. Funding options include; grants, investors etc.

## GEOGRAPHY

Farmazon will be implemented in Kenya.

Two key members of the team already work and live in Kenya giving us an edge in implementation currently with the others based in Rome, Nepal and Rio.


BOO BOO RECORDS

Most Visionary Team

# OTWOH (Ocean Plastic To Heat)

**The proposed idea will help clean plastics currently polluting the ocean and the coastlines and utilize them as an energy source at wastewater treatment plants. Plastic pollution has infiltrated our food supply chain, our recreational areas and is only bound to tighten its hold on our ecosystem. Collecting this plastic waste and using it as an energy source to clean human waste will create a cradle-to-cradle solution, while helping wastewater utilities run a more lean and profitable operation.**

## REQUESTS FOR NEXT STEPS

1. Help with fundraising or investment
2. Access to incubators
3. Access to corporate partners

## CONTACT

waterteam14@team.unleash.org

## PROBLEM

The main global challenge we are addressing is SDG 6 (clean water and sanitation) - we are able to provide cleaner water by taking out the harmful plastics that release chemicals and eventually end up destroying the ecosystem.

In turn we are also helping address SDG 14 (life below water), which is being negatively impacted by the plastic that finds its way into the waterways and kills off the ocean fauna.

There is a lack of financially sustainable technologies and business opportunities that would give value to plastic harvesting from the ocean, therefore no one is incentivized to harvest the plastic from the ocean on a large scale.

On the other hand, wastewater utilities around the world are looking for ways to cut costs on energy. The technology which we are proposing will take in plastic waste and use it as a clean energy alternative within wastewater treatment plants.

## SOLUTION

Our solution is to offer wastewater treatment utilities a gasification technology to incorporate within their wastewater treatment process, while at the same time providing a plastic waste collection service.

The technology would allow them to turn ocean plastic waste into syngas, which can be used to power the wastewater treatment process at the utility. In this scenario, OTWOH would pay workers from the local area (an organization located near the plant with which we have a partnership) to pick up plastic, and would sell it to the wastewater utility.

OTWOH would realize a profit through the sale of the tech and the plastic supplying service, while the water utility would realize important cost savings over the long run since the energy generated would be worth more than the plastic's cost.

This financially sustainable system would ensure that there is always an incentive for picking up plastic waste in coastal areas.

Most Visionary Team

## INNOVATION

There has been no real incentive to clean up coastal area plastics and to date there have been no wastewater treatment plants that have utilized this type of gasification technology, with the feedstock being 100% plastic waste.

The solution we are offering is the cleanup of the plastics and their diversion into the wastewater treatment plants as an energy source.

The technology is currently being used on airforce bases and in remote locations around the world to clean general waste (i.e. waste found in trash and food discards). Those types of waste gasification technologies are the competitors in this process.

## IMPACT

The impact is the introduction of a cradle-to-cradle solution to the problem of plastic waste that can be viewed as a power generator rather than something to easily discard in a landfill.

This process is helping completely redesign the waste cycle as it stands now and encourages partnerships amongst industries that currently do not collaborate. The SDGs addressed with this solution are: 5, 6, 7, 9, 14, 17.

What can be used to measure if the solution is successful:

5: Gender equality

6: Degree of integrated water resources managemet implementation

7: Renewable energy share in total final energy consumption

9: Proportion of medium and high-tech industry value added in total value added

14: Proportion of fish stocks within biologically sustainable levels

17: Public expenditure on conservation and sustainable use of ecosystem

## NEXT STEPS

1. Global Water Girls, an organization that the team member Fidan is the CEO of, will create partnerships with the following organizations: Sustainable Coastlines Hawaii, City of Honolulu, Tech Provider, Davi (Consulting Feedback), Ulrik (consulting on ash for architectural use), Jose Fernando (Consulting on nano-tech uses for the heat produced), Charles (business and financial advise).

2. Work to realize the proposed pilot from this project.

3. Use the funding from UNLEASH to implement the pilot.

4. Record data results from the pilot and create a research paper to summarize the pilot outcomes.

5. Use the research paper to make the case for the technology to be used at other wastewater utility treatment plants and generate funding from using waste to treat waste.

## GEOGRAPHY

The team is from different locations - Denmark, Brazil, Mexico, USA (Global Water Girls team).

The pilot location is going to be based in Hawaii, USA.


UNLEASH AWARDS SHOW
– PRESENTED BY BESTSELLER
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Most Compelling Communication

# Dearly

## Intelligent Health Monitoring

**Dearly designs and builds an artificial intelligence platform to help people monitor their health at home, with the ultimately goal of lowering the colorectal cancer mortality, by sending more people with early high risk to the doctor.**

### REQUESTS FOR NEXT STEPS

1. Advice / feedback – business plan
2. Advice / feedback – technical advice
3. Advice / feedback – implementation strategy

### CONTACT

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www.dearly.dk

### PROBLEM

2 out of 3 people die from noncommunicable diseases (NCD) worldwide. Among NCD, global cancer mortality is highly increasing and will account for 42% NCD death by 2030, leading to a $ USD 1.7 trillion economic burden.

Colorectal cancer (CRC) is a leading cause of cancer death worldwide and in Denmark. Only 1 out of 10 people can survive over 5 years if diagnosed at stage 4.

The problem of late detection is mainly because people tend to have a „I am feeling fine“ mindset and have low will to visit a doctor. This self-perception is due to the lack of health information and monitoring tools at home.

### SOLUTION

According to clinical evidence, features of our stool/urine can reflect different digestive disorder symptoms and colorectal cancer.

Thus, Dearly is building an intelligent health monitoring platform that allows people to track their wellness and health status at home simply by uploading stool and urine images.

Our Machine Learning algorithm will analyze the images and provide health suggestions, information and symptoms of high risk.

Despite the technical solution, we heavily rely on partnerships with doctors and/or hospitals. It is key for us to emphasize, that our solution is not diagnosing, but detecting. With early detection, we can help people with high risk of (for now) 9 different symptoms, to get examined by a doctor or the hospital.

Our platform will also connect users to disease specialists, nutrition specialists and disease survival community if they need direct help.

Most Compelling Communication

## INNOVATION

Current stool blood test is tedious and can only detect whether there is blood in stool. Our solution can identify not only blood but also additional features in stool/urine, increasing the accuracy for providing health suggestions.

We harness cutting edge machine learning/computer vision to analyze unique information from our excretion, such as blood, stool size / shape/ color / texture.

In addition, we provide a social platform to connect our users to specialists in different sectors, so they can seamlessly receive help. Our 1st potential competitor is traditional stool blood test kits. However, users have to collect samples by themselves, time-consuming to receive results, and it can only detect blood. The 2nd competitor is the stool app in the market, while it require users to manually input the information they observed.

Other than sending more people with high risk symptoms to the doctors, we are lowering the mental barriers about stool and enable the potential of exponential health monitoring.

## IMPACT

1. We will create awareness about home health monitoring and early cancer detection.

2. We will lower the barriers about stools as tool for personal health monitoring.

3. We will connect different sectors, experts and healthy or unhealthy users.

4. We will reduce the global economic burden from cancer, by sending more people to the doctors.

UN SDG indicator: 3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease.

## NEXT STEPS

We will partner up with hospitals, Danish “Regioner” and hopefully the Danish Cancer Society (Kræftens Bekæmpelse) to get more data and tap into ongoing research programs, while we are working on our algorithm.

Over time, we will start engaging with doctors, hospitals and the Danish Cancer Society to start discussing the potential partnership and win-win opportunities.

## GEOGRAPHY

We will start Dearly in Denmark, but the team members live in Denmark, Switzerland and The United States of America.


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– PRESENTED BY BESTSELLER
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# Education & ICT

Gold Winner

# Hear-oes on Demand

**In Kenya, the ratio of quality interpreters to deaf individuals is 1:7500. A monopoly controls the interpreter network and takes the majority of the revenue, leaving little for interpreters. Institutions that have government mandates to provide interpreter services face both a shortage of qualified interpreters, and a lack of pricing transparency. Our solution disrupts this system through a shared economy model that leverages a web and mobile enabled platform to connect interpreters to the deaf.**

## REQUESTS FOR NEXT STEPS

1. Access to legal and tech resources
2. Help with fundraising or investment
3. Access to incubators

## CONTACT

educationteam18@team.unleash.org
Facebook: Hearoes on Demand

## PROBLEM

Currently, there is a major lack of access to qualified interpreters at an affordable price for the deaf community. Disabling hearing loss impacts 360 m people worldwide.

Unaddressed hearing loss poses an annual global cost of 750 bn USD. Prevalence of hearing impairment for adults aged >15 is 15.7% in sub-Saharan Africa vs. 4.9% in high-income countries. There are 140 million deaf people in sub-Saharan Africa and 1.5 M in Kenya.

Hearing loss without adequate support services like access to interpreters leads to loss of schooling, economic opportunities, employment prospects and poor healthcare services. In Kenya, the gap between the availability of interpreters and deaf individuals is 1:7500. The access to interpreters is controlled by a monopolistic body which charges 40% premium on the services to the deaf.

There are no quality standards for interpreters, so quality is inconsistent causing the 35,000 institutions and deaf individuals to pay inflated prices for sub-par services when they need it.

## SOLUTION

A shared economy model that leverages a web and mobile enabled digital platform to connect quality interpreters to the deaf. The platform will: connect the deaf community to the qualified interpreters, leverage existing payment mechanisms to make the transactions easy, integrate SMS based services and a web platform to easily schedule appointments, create a registry to be a comprehensive database of the deaf community and qualified interpreters, serve as a capacity building and a training tool for the interpreters and act as an ecosystem that enables engagement and interaction in the deaf community.

Some features of the platform will be a digitized training module for everyone to encourage inclusion, a job finding platform for both the interpreters and the deaf community and an interactive video enabled engagement tool to be connected globally. The above solution prevents the deaf community from exploitation by making access to interpreters easier, affordable and of a standard quality.

Gold Winner

## INNOVATION

HOD platform is a foundational platform that will enable other service providers to build on its infrastructure. This will create an ecosystem that integrates the deaf community with existing systems.

This solution leverages the M-Pesa payment system to facilitate transactions. Although platform will have a mobile smartphone app and an online website, it will also enable a SMS scheduling system for reaching users with no internet connectivity.

Currently, there are no direct competitors in the Kenyan market. The market segment for people with disabilities has been largely ignored and therefore, monopolized by local providers.

To address the monopoly controllers, HOD field expert has engaged and confirmed support from influential stakeholders in the interpreter community.

Africa is a greenfield economy where digitization of services is needed for economic growth, and HOD wants to revolutionize the social impact sector by introducing new methods of delivery.

## IMPACT

HOD platform has the potential to connect 1.5 million deaf individuals in Kenya (360 million deaf globally) with affordable and qualified interpreters when needed.
This will ensure integration and inclusivity for the deaf through access to education, vocational rehab services, better healthcare, news sources, insurance policies, telecom services, etc. It will improve education and skill development for the deaf, leading to better job prospects.

Providing training modules with a focus on sign language applications, will open up higher paying jobs for the interpreters.

The integration of online training and engagement tools for the deaf will reduce the stigma associated with their disability.

The above correlates to SDG 4 (inclusive and equitable quality education and lifelong learning), SDG 3 (ensuring healthy lives and promote well-being for all ages) and SDG 8 (promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all).

## NEXT STEPS

- Continue to engage already identified stakeholders (Deaf Community, Deaf Associations, National Council of People with Disability, County governments, Universities).
- Create partnership with company - “Be My Eyes”, and understand their learnings.
- Call on networks to find the most appropriate developer to bring on board (we have existing networks and advisors).
- Video and social media promotion followed by broader marketing campaign to gain traction and support.
- User onboarding through creating awareness. Create beta partner community for product development.
- Product development (testing our product).
  1. Prototype - Test. Iterate. Test. Iterate.
  2. UX research and design.
  3. Establish system for fast learning loops.
  4. Release beta publicly.
  5. Product refinement (through continuous feedback).

## GEOGRAPHY

The team represents five continents and six countries. The team is based in Kenya, Australia, Canada, Bosnia & Herzegovina, India, and United States of America.

Half of the team will move to Kenya to work fulltime in preparation for launch, while others work in an advisory role part-time. Leading up to the launch, the rest of the team will join in Kenya.

The initial pilot will take place in Nairobi, followed by all of Kenya. We then plan to scale to all of Sub-Saharan Africa, Southeast Asia and Latin America.


Education & ICT
WINNER
BRONZE
EDUCATION & ICT
GOLD
EDUCATION & ICT

Silver Winner

# EduLocker

**Technological development is rapidly outpacing formal education; rendering a plurality of technical skills increasingly redundant - lifelong learning is the only way to prevent this social disaster taking place. MOOCs were believed to be the solution to this issue- however, they failed because they lacked employer credibility. EduLocker will verify and aggregate MOOCs in partnership with employment entities to give them real credibility and revive their value; sparking true lifelong learning.**

## REQUESTS FOR NEXT STEPS

1. Access to corporate partners
2. Help with fundraising or investment
3. Access to networking events

## CONTACT

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Facebook: EduLocker

## PROBLEM

We live in a world where technological development is rapidly outpacing educational understanding. As such, if we want youth and adults to have "relevant skills (including technical and vocational skills) for employment, decent jobs and entrepreneurship [SDG4.4], they need to be able to learn in a way that keeps abreast of technological development.

MOOCs were considered to be a way of resolving this. However, they face a key flaw in that they are not fully recognized by employers; discouraging their uptake and hindering lifelong learning.

This problem has its roots in the recruitment process. The current process has been unchanged in decades: recruiters receive and filter CV's, this is done in a way that places excess weight on formal education and takes away value from MOOCs. This is because MOOCs are (a) Hard to verify and (b) Hard to aggregate in an unfragmented way; this combination reduces both their reliability and ease-of-use to the point where their value is reduced.

## SOLUTION

Development of a platform called „Edulocker" that aggregates and validates MOOC (and formal) qualifications to provide a „one-stop-shop" overview of a person's credentials will help bridging the gap between education and job market requirements. This is tied into a matching engine that uses natural language processing to partner users with relevant job opportunities.

Edulocker's source code is based on the Indian Gov „Digilocker". Digilocker is an open source platform that ties biometric data to direct connections to educational institutions; creating a completely secured link between the person and their qualifications that any employer can verify with a single click. It was rolled out for educational purposes in May 2017 and has scaled up to include 8mn registered users to date. Its existing features can be augmented to add MOOC registration.

Building on this, Edulocker will have a „Matchup" feature that will leverage the ‚tags' automatically generated by MOOC courses and tie them to existing vacancies on job search platforms.

Silver Winner

## INNOVATION

This solution has not been conceptualized before in large part because it‘s foundation is based on software that has only existed for a few months. The technical foundation was only developed as the result of a massive, government sponsored project, India Stack, that could not be replicated by any private sector player. It is unique because it‘s utilizing new, yet proven, technology in an unusual manner that is highly targeted.

The only operators in a similar space would be OpenClassrooms and Google Activate. OpenClassRooms is a French website that offers online business and digital skills certification that‘s verified by the State. Google Activate is a Spanish PPP Initiative designed as a response to youth unemployment in Spain whereupon participants get certified training in a small selection of ‚employability‘ tools (e.g. Digital Skills).

Both programs are charity projects run in small, non-English speaking countries, negatively impacting their scalability and sustainability.

## IMPACT

This solution has the potential of making a positive impact globally, changing the recruitment process and ensuring people stay up to date with job market requirements. This relates to SDG 4 Quality education - 4.4, because it will substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

Also, it is directly connected to SDG 8, Decent work and economic growth, because it impacts reducing the proportion of youth not in employment, education or training.

It also related to SDG 9, Industry, innovation and infrastructure, indirectly affecting inclusive and sustainable industrialization, enabling increase in industry‘s share of employment and gross domestic product, in line with national circumstances.

## NEXT STEPS

During the UNLEASH process we have initiated a series of high-value conversations with key potential strategic partners.

Our short-term strategy would be based on how rapidly those partners react and with what their baseline offers are. Once we have clarity from these partners as to their commitment we‘ll conceptualize the best way to work with them. If none of the strategic partners react in a manner we consider satisfactory we‘ll reach out to a broader base of interests we didn‘t have the time to interact with during UNLEASH.

Regardless of the results of either of this we‘ll be bolstering our team by adding experts in natural language processing and development. These individuals have been identified and are keen to join the time. The plan is to start building a prototype and set up plans for funding.

## GEOGRAPHY

EduLocker will be piloted in the United States of America, but team members live in United Arab Emirates, the United States of America, Bosnia and Herzegovina, Kurdistan – Iraq and Kenya.

Bronze Winner

# Nexus Programme

## Bridging the gap to education

**Nigeria has the world's largest population of out of school children and one of the major barriers to child education is the household economic situation, which requires children to work at home, mostly on the farm. Our program incentivizes parents who are farmers to release their children to go to school, by providing agricultural inputs, machinery and training at subsidized rates. The program also leverages existing technology to provide literacy skills training, equipping children with compulsory requirements for primary school entry.**

### REQUESTS FOR NEXT STEPS

1. Advice/feedback – business plan
2. Advice/feedback – implementation strategy
3. Access to corporate partners

### CONTACT

educationteam16@team.unleash.org

### PROBLEM

Nigeria has the world's largest population of out of school children – 10.5 million, mostly in rural areas, with high poverty levels. Children in these communities do not enroll in primary school because they belong to subsistence farming families, where they provide much need labor on family farms and as such are not enrolled in school.

In addition to the circumstantial restraint, these children lack basic literacy skills sand cannot proceed to primary school level of study, where every year in school increases productivity/hourly wage potential by 10-30%.

### SOLUTION

We are creating an incentive structure, which will encourage parents to educate their children. Our solution – called Nexus - is a link between the needs of the farm and the education of the child.

The farmer subscribes to the Nexus Programme, which provides incentives to the farmer, on the condition that their child participates in literacy training provided by Nexus and proceeds to primary school thereafter.

The incentives to the farmer include subsidized access to agro inputs, tractor services and training in best practices. Both literacy training and agricultural training will be provided using low cost technology.

Our solution will leverage existing technologies and partner with local and international organizations to deliver the incentives and training. Literacy skills will be provided by existing content providers, while agro inputs and training will be supplied by players looking to penetrate these specific markets. We will work closely with local NGOs and community leaders to establish trust and encourage adoption in the community, and monitor progress/success of the programme.

Bronze Winner

## INNOVATION

Uniqueness: The innovative part is the incentive structure. We are incentivizing farmers to invest in the future of their children, by helping them improve their farms yields and household income. To our knowledge, there is no incentive program focusing on farmers that solve the fundamental issue we have described. In some ways, it is a market inefficiency that we are trying to solve. With one program, we address the need to improve farming productivity and living standards while achieving the target of increasing education access for children.

Competitors: Non-profits that pay farmers for sending their children to school, or give farmers agricultural inputs (fertilizer, seeds etc.). Our ideas is different because it is financially viable due to the partnership model.

Viablility: We will leverage partnerships with organizations that have investment interest in the communities, while reducing direct costs to the Nexus program and achieving our development goals.

We are inviting agro chemical companies to sell inputs at a discount “today”– and secure access to a new market of 2M. Nigerian farms, transitioning from subsistence to commercial farms”

## IMPACT

Our program has impact on SDG 2, 4 and 17.

Increase in literacy rate in primary school children: By providing conditional incentives to the parents, we encourage enrollment of children in the literacy skills program and primary school.

Reduction in hunger: By increasing agriculture productivity, we increase access to food and reduce hunger.

Reduction of poverty in the country: By increasing agriculture productivity and encouraging commercialization, we increase household incomes, thereby reducing poverty levels.

## NEXT STEPS

- Validate assumptions on market adoptions
- Secure partnerships for agrochemical companies, agro training videos, literacy skills and low cost technology

## GEOGRAPHY

The team is based in Lagos, Nigeria, Copenhagen, Denmark and Abu Dhabi, UAE.

# Energy

7 AFFORDABLE AND CLEAN ENERGY

Gold Winner

# earthmark

**Product manufacturers won't use sustainable practices until demanded by consumers, but consumers have no easy way to make the best choices. The earthmark app allows consumers to easily identify the most sustainable choices within product categories, spurring green competition between brands; so a minority of consumers can influence the most competitive sectors. earthmark will be funded by product referrals to partner retailers - like Amazon, which gives 4% on successful sales.**

## REQUESTS FOR NEXT STEPS

1. Advice / feedback - business plan
2. Advice / feedback - technical advice
3. Help with fundraising or investment

## CONTACT

energyteam21@team.unleash.org

## PROBLEM

Consumer goods are ultimately responsible for 100% of anthropogenic global greenhouse gas emissions. Despite this producers have been slow to adopt sustainable practices, due to lack of pressure from consumers.

The existence of numerous consumer labels and systems rating the impact of consumer products, have failed at affecting mainstream behavior, due to the inaccessibility of simple information.

The greatest progress in sustainable manufacturing has been done in traditionally green industries, whilst mainstream brands have been complacent due to unaffected market share in their segments.

## SOLUTION

Our solution is a selection of the most sustainable choices among consumer products. It consists of a "sustainable choice" mark given to the most sustainable brand per product category.

The simplicity of the mark, allows for the use of background metrics that are relevant to each category including: lifecycle emissions, water and energy use, energy, recyclability, etc.

Consumers can access the info for a variety of categories in one place, on their smartphones or computers. This lowers the activation energy to engage in better behaviour.

Continuous user engagement is encouraged through rewards and discounts earned for sustainable choices. This is made possible through relationships with retailers and their affiliate/referral programs.

By awarding the mark to brands we expect sustainable manufacturing to become a point of competition between brands. Producers will thus be incentivized to alter their practices with only the minority of consumers required to take/retain market share in the sector.

Gold Winner

## INNOVATION

earthmark builds on the extensive data collected by existing agencies such as the FSC, Energy Star and EU Energy rating, and utilises this data to create a “sustainable choice” mark for the best-in-class brands in each product category. This allows users to access information across sectors in one place.

“Threshold” labels like Energy Star are found on virtually all computers, offering little utility to a buyer’s decision-making process. Whereas, scale ratings, like EU energy labels require extensive comparison between products and are so specific (energy efficiency) that they potentially mislead on true impact (an efficient appliance may have been built with an inefficient supply chain). A best-in-class-label solves these problems by making an accurate snap decision possible.

Finally, rather than shaming necessary, but unsustainable practices such as flying; earthmark focuses on brands, to encourage competition between manufacturers to be the most sustainable.

## IMPACT

Our service, if successful, ultimately improves global consumer behavior, thus affecting the SDG goals 11-15. These 5 SDGs concern Sustainable Cities, Responsible Production & Consumption, Climate Action, Life below Water, and Life on Land.

Sustainable consumption includes many different objects, such as greenhouse gas emissions, animal welfare, transportation of products, etc. Therefore, our service has the potential to positively impact a wide range of SDGs, because of the expandability of our service across geographies and product types.

While our service initially will be targeted the middle/upper class in developed and progressive societies, the purchase decisions of this important consumer group ultimately impacts producers, who fight over even single percentage points of market share in certain product segments. Sustainable consumers can therefore become a type of “swing vote” in competitive industries, having an outsize impact, even as early adopters of our technology.

## NEXT STEPS

Firstly, we want to develop a proof of concept which will allow us to run usability studies and seek a seed funding partner for launch.

Secondly, we want to establish relationships with other eco-labels and monitoring agencies to build a database of information on the most sustainable products. We will need the backing of an organization such as the UN to drive cooperation across a fragmented sector.

Finally, we want to establish relationships with retailers in our launch region as well as global retailers like Amazon, to achieve global reach and scale quickly.

## GEOGRAPHY

The team is situated across the globe (Bangladesh, Denmark and South Africa), but we are prepared to establish ourselves in a jurisdiction that is favorable to digital businesses and open to entrepreneurs from elsewhere.


WINNER
Winner
GOLD
Winner
GOLD

Silver Winner

# Data Enrichment for Microgrid Site Assessment

**Microgrids are critical to increase energy access in Tanzania by 2030. Currently, microgrid companies spend between 40-60% of project costs on site surveying to determine viable locations for microgrids.**

**Our site surveying solution uses high resolution imaging recorded by drones to develop and train a machine learning algorithm which can use satellite data to recognize and map building structures such as houses and estimate economic activity in a village. This will reduce site surveying cost, expedite microgrid deployment, and increase the number of electrified households in Tanzania.**

## REQUESTS FOR NEXT STEPS

1. Advice / feedback – technical advice
2. Advice / feedback – implementation strategy
3. Help with fundraising or investment

## CONTACT

energyteam12@team.unleash.org

## PROBLEM

Current electricity production in Tanzania meets less than 15% of demand per annum. Less than 30% of the total population is connected to the national grid. As such, microgrids have been identified as one of the most effective strategies for providing energy to Tanzania's rural population.

To date, 76 megawatts of microgrids have been installed to serve this community.

However, existing site surveying strategies such as satellite imaging, do not provide significant detail on site viability, and detailed manual site surveying is very time and cost-intensive.

Across microgrid companies, site investigation accounts for approximately 40%-60% of costs.

Therefore, these companies need a faster and more effective way to analyze data on potential microgrid sites to expedite deployment and increase the number of Tanzanians who have access to energy.

## SOLUTION

Our solution will provide a better approach to site surveying by augmenting drone imaging with existing data to detail the viability of locations for microgrid development.

This process will use existing satellite data and manual surveying with drone imaging to develop a machine learning algorithm which will ultimately provide a report on the viability of potential deployment locations, based on the specificities provided by our microgrid developer clients.

We will deploy drones that will have geo-tagged data imaging capabilities so that high resolution images can be taken. Drone imaging, satellite data, and survey information will be compared against indicators needed for analyzing microgrid site viability.

Thus, a developed machine learning algorithm will be able to utilize ground-truthed data on rural areas in Tanzania to generate a report, detailing the viability of the site for microgrid development.

From this machine learning algorithm, existing satellite data can be analyzed to assess viability, eliminating the need to assess new sites with drone mapping or manual surveying methods.

Silver Winner

## INNOVATION

Currently, there are no existing competitors that combine this data to survey potential deployment sites for microgrids.

Competing with microgrid companies' currently disconnected methods of site surveying, we are providing a more efficient way to collate this data and create viability reports that would greatly improve their efficiency.

By using and improving existing data streams with additional technology, we are creating a more effective, timely, and innovative solution and the provided reports ensure that time and money are not spent on inviable site locations.

However, using drones and machine learning for surveying is not an entirely new concept. Facebook has used machine learning to identify buildings and estimate where people live to map wifi potential in urban areas. This was highly accurate in estimating population density in cities, but not in rural areas. Another organization, Datacorps, has used predictive models to identify who will be selected by GiveDirectly for projects based on thatched versus tin-roof houses in Kenya and Uganda.

The microgrid developers' existing strategies of using satellite imagery only provides a low accuracy rate of 22%, so there is a huge opportunity to improve this by augmenting it with high resolution imaging. Given the high need of this data and the excitement in the market around drones, it is clear that this is a segment of the market that is ripe for exploration.

## IMPACT

The amount of currently available energy in Tanzania does not meet the need of their 51 million people.

Microgrids have already been identified as a key opportunity to provide energy to millions of people.

By reducing the cost and time required to survey potential microgrid sites, companies will have the ability to deploy microgrids more efficiently, thereby accelerating rural Tanzanians' access to electricity.

Indicators 7.1 (By 2030, ensure universal access to affordable, reliable and modern energy services) and 7.2 (By 2030, increase substantially the share of renewable energy in the global energy mix) could both be used to measure the success of this solution.

## NEXT STEPS

Feedback on the business plan and implementation strategy would be very valuable.

A machine learning algorithm needs to be developed in phase one so that ground-truthed data of a variety of rural areas in Tanzania can be used to analyze other potential regions.

We would need to approach funders, and recognize that the most promising investment would be from grant capital and angel investors.

## GEOGRAPHY

The target market is Tanzania.

Bronze Winner

# Wasted

**Wasted is a renewable energy enterprise converting biodegradable waste into biogas for rural and off-grid electrification via a mini-grid system. From experience on two biogas to power project in Nigeria, Wasted has developed a sustainable and scalable operation by considering placing biogas facilities near feedstock supply, focusing on projects under 1MW and developing a mile-stone based financial strategy using available financing structures such as Development Impact Bonds (DIB).**

## REQUESTS FOR NEXT STEPS

1. Help with fundraising or investment
2. Access to corporate partners
3. Help with travel for your team to meet up

## CONTACT

energyteam17@team.unleash.org
Linkedin: Wasted

## PROBLEM

An estimated 1.3 billion people lack access to electricity with over 600 million of them in Sub-Saharan Africa.

Most of these people live in remote rural areas where the communities are riddled with waste which has the potential to provide clean energy.

In Nigeria about 100 million people currently do not have access to electricity and are in close proximity to agricultural clusters generating tons of waste. Waste to power is relatively new in the Nigerian energy mix however it has proven to be an efficient and reliable energy source in several East-African communities.

Wasted has gained valuable insights from earlier unsuccessful biogas projects which failed largely due to lack of a sustainable business model especially as it relates to waste sourcing, sizing, maintenance and financing. These insights form the basis of developing a sustainable business model for waste to biogas plants in locations with available waste resource and commercial and residential users of the electricity.

## SOLUTION

To create a commercially viable biogas plant for electrification Wasted has developed a sustainable and scalable biogas business model as follows:

1. Develop biogas plants by placing them near a large-scale feedstock supply, e.g. large animal husbandry farms. This will entail working with the farms and agro processors to develop a biogas system on or near their site. The waste will be used to generate electricity which will then be sold to the farms, surrounding communities and industries. This solves the waste logistics and the feedstock reliability challenges.

2. Focus on projects below 1MW which does not require licensing or excessive investment costs per project.

3. Develop a two-step financial strategy using available financing structures such as traditional funding channels from donors and angel investors for stage one funding for project development, and impact investment fund and government fund under the development impact bonds model as well vendor financing for stage two.

Bronze Winner

## INNOVATION

Wasted is an innovation because the solution integrates a sustainable and scalable business model with a solid financing strategy.

This entails owning the systems, implementing the projects where large feedstock quantities are located and having a two-step financing strategy.

The direct competitors are NGOs and private companies exploring the possibility of mid to large-scale biogas projects while indirect competitors are private companies working on increasing access to electricity in off-grid communities using all forms of technology.

However, with the large target market of approximately 100 million people in Nigeria and Wasted's focus on biomass/biogas technology has provided a niche market.

The main challenges that have prevented prior biogas project to succeed includes poor focus on the sustainable and scalable factors, particularly on maintenance, reliability of feedstock and focus on domestic household system mainly facilitated through NGOs.

## IMPACT

Wasted is looking to generate 40MW of electricity which will translate to approximately 2 million people having access to clean electricity which contributes to SDG 7.

The use of waste for energy generation ensures a cleaner and healthier environment and improved waste management practices and reduces the impact of land filling of biodegradable waste which release greenhouse gasses and contributes to climate change SDG 13.

Access to electricity has several socio-economic benefits which include: Access to cheaper electricity for the farmers for agro-processing and manufacturing allowing for cheaper production and cost savings.

Access to electricity for the surrounding communities will improve likelihoods by: refrigeration for household and healthcare, lighting for improved safety and ability for children to study.

It will also create better quality fertilizer products from the biogas slurry (by-products) instead of using waste directly as fertilizer or inorganic fertilizers.

## NEXT STEPS

The plan is to gather some preliminary information on possible target locations, market information and exploring possible partners especially for funding and technology.

The next step is to set up plans to raise funding for a detailed feasibility study to build a pipeline of projects in Nigeria while also incorporating a venture co-owned by all team members.

## GEOGRAPHY

The current target market for Wasted is Nigeria.

The team members live in Nigeria, the United States of America, Brazil, South Africa, Indonesia and Germany.

# Food

Gold Winner

# Doti Gold

**Doti Gold is a for-profit organization that transforms food waste to gold (animal feed and fertiliser) using the black soldier flies. Doti Gold will produce more affordable inputs mainly proteins for fish and bio fertiliser for crops contributing to farmers‘ livelihoods. Urban and rural households will have access to affordable and nutritious food including proteins from fish and chicken contributing to zero hunger.**

## REQUESTS FOR NEXT STEPS

1. Advice / feedback - implementation strategy
2. Help with fundraising or investment
3. Access to corporate partners

## CONTACT

foodteam15@team.unleash.org

## PROBLEM

The sad twisted irony of the world today is that we produce enough food, but 1/3 is wasted - yet hunger persists.

Sub-Saharan Africa is experiencing rapid urbanization yet non-performing agriculture creates food insecurity and socio-economic imbalances.

For instance in Nigeria, up to 12.5 million tons of food waste end up in landfills annually whereas 7.1 million people are severely food insecure among them at least 1 million children who suffer from severe acute malnutrition.

The capacity to respond to these needs is dimishing due to rising costs of farm inputs that is dependent on import. For example, fish farmers are facing critical challenges in meeting the protien requirements for the fish feed and spend up to 70% of the farm running costs.

Can we upcycle food waste into farm inputs, especially animal protein for fish/poultry feeds and bio-fertilizer for crops, towards achieving zero hunger?

## SOLUTION

The Doti Kit is a handy, low cost, easy to operate black soldier fly farm suitable for localized conversion of waste on farms or at the community level to feed and fertiliser.

It is a proven biotechnological solution that transforms “food waste to gold”.

It harnesses the unique capabilities of the black soldier fly to convert waste into insect protein, growing up to 1,000 times in less than 3 weeks.

The solution is two pronged:

B2C: Develop and deploy “Doti Kits” that empower small holder fish and livestock farmers and unemployed youths to convert food and organic waste to fresh larva and bio-organic soil enhancer.

B2B: That converts bulk waste from households, factories, food service organizations and farms into bulk protein meal, and bio-fertiliser.

This aspect involves three basic steps:

- Aggregation of food waste
- Breeding larva
- Processing into protein meal and bio-fertiliser. fish and livestock feed producers, seed and fertiliser distributors are the primary customers.

Gold Winner

## INNOVATION

The science of farming black soldier fly has been proven and exists on a global scale. Typically, the process is performed at a commercial production scale in a factory.

Our market research shows that the kit system we have developed does not exist – the capacity for farmers to install the kit as a remote/isolated system is a new concept.

Currently, there are no large-scale black soldier fly poducers in Nigeria.

Competitors on a global scale include AgriProtein (South Africa) and EnviroFlight (USA).

The solution has not been implemented in Nigeria yet because prior to the recession that started 2 years ago, the fish and poultry farmers had the capital to import fish feed. Once the recession hit, farmers started to look for less expensive alternative means of acquiring the feed supply.

As such, although the market demand for the product has existed for a long-time, the conditions are now right to introduce the product to the market.

The innovation is economically replicable and satisfies a specific need.

## IMPACT

Doti Gold will have multidimensional impacts:

- Food secure households in rural and urban areas with better access to affordable nutritious food throughout the year, including proteins from fish and chicken
- Profitable fish, livestock and crop farms that generate higher income for small holder famers and boost local economies
- Smallholder farmers relying on locally-produced and affordable agricultural inputs
- Sustainable urban and rural communities that work together in virtuous cycle for sustainable production and consumption
- Sustainable cities with reduced of CO2 emission
- Sustainable poverty reduction through empowerment of the poorest men and women of urban and rural communities

Doti Gold will directly contribute to achieving nine SDGs (1, 2, 5, 8, 9, 11, 12, 13 and 17) from ending poverty to zero hunger, including gender equality, decent work and economic growth, sustainable cities and communities, sustainable production and consumption to life below water and partnerships.

## NEXT STEPS

Step 1: We will start by prototyping 50 kits in Nigeria in partnership with USAID, farmers associations and distribute them to focus group users consisting of various customer types, in order to verify the design, the use and get customers' feedback

Step 2: Adjusting design and use of kits and produce 5100 kits for sale in the first 18 months. To supply eggs to customers, we will set up a breeding facility that produces 1 ton of eggs in 18 months.

Step 3: Feasibility study and market research to map actors of waste management and farm inputs actors, and potential partners in order to assess commercial feasibility of the B2B model.

## GEOGRAPHY

The team consists of 6 members. One member will be completing an MBA program in Barcelona, Spain (until Dec. 2017). Another will be in South Sudan. Another will be returning to Ghana. Another will return to work in Rome, Italy. And the final two members will be returning to work in Nigeria.


WINNER
GOLD
GOLD
GOLD
GOLD

Silver Winner

# The Milky Way to Development and Waste Reduction

**A simple, practical and scaleable solution that will help standardise the post-harvest stage of milk production for smallholder farmers in emerging markets. Giving confidence to companies investing in the dairy industry, and ultimately enabling smallholder farmers to increase their income, feed their community and know that their delicious and nutritious milk is not going to waste.**

## REQUESTS FOR NEXT STEPS

1. Advice/feedback - technical advice and business plan
2. Access to corporate partners, particularly in the dairy industry
3. Help with travel for the team to meet up

## CONTACT

foodteam14@team.unleash.org

## PROBLEM

Worldwide 200 million tonnes of milk is lost at post-harvest and distribution stage. At the same time, 795 million people suffered from undernourishment in 2014-16.

In developing regions (i.e. sub-Saharan Africa, North Africa, Central Asia, South Asia, Southeast Asia) the lack of refrigerated storage facilities, a consistent cold chain for transport and inadequate hygiene conditions during milking and in transport leads to 16-20% milk waste.

Milk spoilage occurs when containers for transporting milk from farms to collection centres are variable, unclean and lack well-sealed lids. After travelling long distances by foot to collection centres, farmers‘ milk is tested and often rejected. Dairy companies feel unable to invest in unreliable sources, or feel the need to spend time and income driving vehicles to individual farmers.

As a result, the milk supply in these countries does not meet the emerging market demand, and there is an undersupply to communities - especially children - of a highly nutritious source of protein, minerals and vitamins.

## SOLUTION

A two-unit system solution.

First, a new design of standardised stainless steel milk cans, lightweight and ergonomically designed for easy carrying, with a tight-sealing lid and able to be cleaned effectively with no internal crevices susceptible to microbial growth leading to milk stones.

Second, to install a solar or biogas powered cleaning and sanitation unit at milk collection centres. Here milk cans are washed with soap, rinsed with water and sterilised with steam using a pressurised hand-held nozzle.

The containers are then sealed before farmers return home with cleaned and sealed container, ready to re-fill. This prevents microbial and physical contamination, thus ensuring less waste, higher quantity and quality of nutritious protein, and assurance for dairy companies working with dairy co-operatives and collection centres.

Silver Winner

## INNOVATION

The system is a simple and robust solution that can cope with harsh conditions in the target countries. Its simplicity makes adoption by farmers and co-operatives very likely.

Competitve solutions are mainly aiming to establish a functional cold chain or provide cooling devices (e.g. biogas powered milk chillers on farms). So far none of them have been successfully implemented as equipment might be over-specified and/or too expensive for small scale farmers.

## IMPACT

We are creating impact for the small-scale dairy farmers, by increasing their income due to higher sales of safe milk. This improves the living standard of the farmers‘ family.

In the long term, the increased income allows the diary farmers to invest in their farm (i.e. increased feed quality, more sanitation measures, more cows).

We create impact for dairy firms and cooperations by guaranteeing a high quality assured milk that can be used for the production of dairy products.

We reduce milk waste during transportation and more milk reaches the processing plant. Greenhouse gasses per liter of milk are reduced as efficiency is increased.

SDG goals:
1: No Poverty, 2: Zero Hunger, 3: Good Health and Well-being, 8: Decent Work and Economic Growth, 12: Responsible Consumption and Production and 17: Partnerships for the goals. are applicable to this case.

SDG indicators:
2.1.1, 2.2.2, 2.3.1, 2.3.2, 3.9.2, 8.5.2, 12.3.1, 17.16.1 and 17.17.1 can be used to measure the succes of the solution.

## NEXT STEPS

Contact and look to partner with co-operatives and NGOs working in Ethiopia.

Design a prototype container and washing system, along with more detailed costings.

Pitch to representatives from the dairy industry, looking to add value to their development work in emerging markets

Run a pilot scheme in an area with 10 villages.

## GEOGRAPHY

The team members come from the United Kingdom, Germany, Egypt and the Netherlands.

The team will be based in Amsterdam, the Netherlands.

Bronze Winner

# HarvestHub

**HarvestHub connects farmers in Tanzania to post-harvest services including storage, processing, transportation, and direct connections to markets. Leveraging existing USSD technologies, high mobile phone penetration and mobile money services, HarvestHub will allow farmers to contract services on demand, and pay for the exact time and duration they need. By giving farmers a range of options post-harvest, HarvestHub will reduce food loss and improve farmer livelihoods.**

## REQUESTS FOR NEXT STEPS

1. Advice / feedback – business plan
2. Advice / feedback – technical advice
3. Advice / feedback – implementation strategy

## CONTACT

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## PROBLEM

An estimated 20-50% of food produced in Sub-Saharan Africa is lost post-harvest along the agricultural value chain between the farm and the consumer. This contributes to both loss of income to farmers at the economic margin and undermines local food supplies.

Technologies to prevent post-harvest loss (PHL) exist. Solutions include traditional storage warehouses, solar-powered cold storage systems, drying technologies, hermetically sealed feed bags, grain silos, and new innovations are entering the market regularly.

However, farmers and aggregators with perishable or surplus agricultural products often lack access to these technologies, primarily due to cost and accessibility. There is a clear and unacceptable gap between existing solutions and the farmers and aggregators who need them.

Addressing this gap fills a clear market need and will prevent overall food loss in Sub-Saharan Africa.

## SOLUTION

HarvestHub is a digital ecosystem connecting stakeholders across the agricultural value chain to prevent post-harvest loss (PHL).

The system capitalizes on the high mobile penetration of Tanzania (approximately 80% of households) and the common use of mobile money services.

The digital platform utilizes USSD for farmers using a basic mobile phone, as well as mobile application and internet interface.

The service allows owners of PHL technologies (warehouses, cold storage facilities, dryers, vehicles for transport, etc.) to rent, via a pay-as-you-go model, their services and facilities to farmers and aggregators.

It also provides farmers an option to sell products directly to the market, providing greater control over quantity and price.

Finally, it allows farmers to connect with one another for potential group-buying of these services or group sales.

Overall, HarvestHub provides a holistic solution to reduce food loss, improve farmer livelihood, and better stabilize the food supply.

Bronze Winner

## INNOVATION

It is clear that storage and other post-harvest technologies reduce food loss and increase farmer incomes. While post-harvest loss technologies such as warehouses or cold storage exist, they are not well utilized by small-holder farmers due to a lack of access and affordability.

Our solution connects farmers to these services and allows them to “rent” these services at an affordable rate and only as they need them (i.e. renting cold storage for one week).

The digital platform further connects farmers directly to the market and to one-another for group purchase services.

Finally, the collection of data on the demand for these post-harvest services will help spur new investments.

While there are other services in East Africa directly connecting farmers to markets, and one connecting them to warehouse storage, there is no comprehensive platform, nor is there one which utilizes the pay-as-you-go model to bring down the overall cost of these services.

## IMPACT

HarvestHub has the potential to significantly reduce food loss in developing countries, while also increasing the income and livelinhood of small-scale farmers and agricultural workers.

There are 11.3 million agricultural workers in Tanzania, accounting for 78 percent of the labor force. Of these workers, approximately 4 million smallholder farmers, our of whom 85% live below the poverty line. HarvestHub has the potential to make a profound impact on the lives of these workers and their families.

The digital platform will mainly contribute to a SDG 12.3.1 by reducing food loss in developing countries.

The solution will also contribute to SDG target 2.3.2 by increasing income of small-scale food producers.

## NEXT STEPS

We plan to conduct on the ground market research in Tanzania to assess supply of service providers, demand for services, and willingness to pay.

We will continue consulting with experts and stakeholders in order to develop a certification process for service providers.

Additionally, we are working on a prototype of the platform on both USSD and online. From there, we will conduct field based user testing to see how farmers and service providers react to the platform. We wil then pilot the solution in one or two districts in order to assess demand

We are currently discussing a potential collaboration with the ”Farmazon” UNLEASH team.

## GEOGRAPHY

HarvestHub will be implemented in Tanzania.

Current locations of the HarvestHub team members are as Tanzania, the United States of America, Senegal and Czech Republic.

# Health

Gold Winner

# BlockFakRX

**120,000 children die due to counterfeit antimalarial drugs in Africa each year. In Nigeria alone, over 70% of all drugs sold annually are counterfeit. Existing solutions to tackle this problem have proven to be expensive and inadequate. Hence, the proposed use of blockchain technology, which is a secure, immutible and auditable solution for tracking the movement of drugs along the supply chain, so that patients benefit by having a verifiable record of their drug's provenance through our app.**

## REQUESTS FOR NEXT STEPS

1. Advice /feedback – business plan
2. Help with fundraising or investment
3. Access to legal and accounting resources

## CONTACT

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## PROBLEM

According to the World Health Organization (WHO), nearly half of the global pharmaceutical market is comprised of counterfeit drugs with more than 120,000 deaths per year in Africa as a result of counterfeit antimalarial drugs alone.

It has been reported that more than 70 percent of drugs sold in Nigeria are counterfeits.

Patients/customers buying drugs expect therapeutic outcomes but unfortunately cannot distinguish between genuine and counterfeits at the point of purchase.

This inadvertently leads to antimicrobial resistance, therapeutic failure in malaria, HIV/AIDS, TB and high rate of infant and maternal mortality.

## SOLUTION

To build a system that automatically logs serialised drug data as it traverses across the pharmaceutical supply chain and thus, ensures the right product reaches the patients/customers.

The end-user will be able to determine the authenticity of the drug product by scanning product's QR code with their smartphone.

The system will be comprised of a private block chain (to maintain an incorruptible ledger of serialised drug data), an Application Programming Interface (API) (to enable proprietary systems to log data to our private block chain) and a smartphone app (to enable consumers to verify the authenticity of the drug product i.e. manufacturer, quantity, expiry, etc.).

Gold Winner

## INNOVATION

Existing solutions for fighting counterfeit drugs include chemical based solutions such as those used in mini-labs, photo/light based solutions involving the use of hand-held machines, and mass authentication system using SMSes to confirm quality.

These approaches have not been successful in Nigeria because they are expensive, inefficient, inadequate, compromisable and do not fit effectively into people's daily life. Our solution is unique because it empowers individuals with little or no technical skills to detect genuine drugs (through an immutable, secure backend) without additional costs or burden.

While blockchain technology's usefulness in supply chain traceability has been shown in other areas, its use in drug tracking in an aggregated, industry wide manner is novel.

## IMPACT

Our solution has a potential to significantly improve health quality of life of over 180 million Nigerians and many more across the world by getting expected therapeutic outcomes from geniune drugs. This also helps to combat antimicrobial resistance and development of new strains of diseases.

This impact can be measured several SDG 3 targets, including but not limited to:

- Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all
- By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable disease
- By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000.

## NEXT STEPS

1. Get an investor for the innovation.
2. Develop a management and technical team.
3. Develop the backend and UI
4. Further testing of some assumptions.
5. Develop a market penetrating strategy.
6. Launch innovation

## GEOGRAPHY

One team member is based in Nigeria where we plan to flag off the innovation.

Other team members are based in Cameroon, and in India where we have a significant number of manufacturers whose products are used in Nigeria. The last member is based in New Zealand.


Health
WINNER
GOLD
HEALTH
AWARE
mama
licious

Silver Winner

# Afterain

## Life-changing notebooks

**People displaced by conflicts often encounter psychological trauma and mental health issues due to the stressors of violence and uncertainty. Couched as subversive therapy, Afterain provides a free toolkit to displaced persons to learn art skills while undergoing art therapy. Selected art pieces then adorn the covers of high quality notebooks that will be sold locally and overseas. The profits from these sales expand the art therapy program and help purchase new equipment and supplies to upgrade camps. Afterain is a sustainable, innovative social impact business model. It is life-changing notebooks that rewrite the mental health and wellbeing of displaced people.**

### REQUESTS FOR NEXT STEPS

1. Advice / feedback - business plan
2. Access to corporate partners
3. Help with travel for the team to meet up

### CONTACT

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### PROBLEM

Myanmar is a prime case study of the mental illness problems faced by displaced people that go unaddressed.

Globally, there are 65 million displaced persons (UNHCR, 2017). According to Brookings Institution (2016), more than 50% of displaced persons are affected by post-traumatic stress disorders and related mental health issues.

Meaningful hands-on work facilitating expression enables displaced persons to adapt effectively and sustain mental well-being but NGOs are more focused on addressing basic needs, specifically physical health. As a result, mental health needs and issues tend to be overlooked and not talked about.

Not only does mental illness contribute to the high suicide rate in Myanmar camps (three times global average) but also restricts the ability for displaced people to rebuild productive lives, adapt and eventually, reintegrate.

We acknowledge that the access to support resources for Myanmar displaced people is very little - there is no internet access, little funding and one medical professional per 500,000 people.

### SOLUTION

Art therapy has been employed in refugee and displacement camps around the world with great success, but usually requires hands on delivery and aid funding.

Art therapy has shown to reduce cortisol levels by 75%. With this in mind, we have developed a conceptual Art Kit to be supplied for free to camps. This provides supplies and Art Lesson Cards to displaced people to encourage them to creat artworks - and in, turn, undergo art therapy.

These art pieces are then curated and some are selected to adorn our high quality notebooks with a profile of the artist inside the cover. The sale of these notebooks then fund the further expansion of the program and the purchase of needed supplies for the camps.

As such, the displaced persons receive mental health therapy, improved living conditions, self-expression and a sense of purpose. At the same time we shine a light on the crisis in Myanmar and humanise the situation.

Silver Winner

## INNOVATION

Our solution is unique as it offers a sustainable business model of social impact.

We have engineered social impact - mental health support and improved living conditions - for displaced people into how we operate. We will not need to rely on aid funding ongoing.

Our solution is also unique in how easily scalable it is and the ease of exporting the intervention through a supply kit including instructional, inspirational cards and art materials - then there is the rest of the 65 million displaced/refugee population worldwide to service.

In relation to our concept, there are related projects involving art therapy facilitated by volunteers, or selling of art by refugees. However, they do not incorporate concepts of art therapy effectively nor support the displaced persons in a self-sustaining fashion.

International organizations tend to be organized around the provision of physical health services as well as supporting the displaced persons in basic needs.

## IMPACT

SDG 3:
Number 3.4: By 2030 Reduce by ⅓ premature mortality from non-communicable disease through prevention and treatment and promote mental health and wellbeing.

Number 3.5: Strengthen the prevention and treatment of substance abuse, including narcotic drugs and harmful use of alcohol.

The solution will:

- Promote social and mental well-being of IDPs in Myanmar
- Increase society awareness of Art Healing Therapy
- Create an income stream for IDPs

The corresponding indicators are 3.4.2 and 3.5.2, which measure suicide rate and substance abuse respectively.

## NEXT STEPS

We are all committed and passionate about this idea. We have all expressed keen interest in putting it into action.

We want to see this happen and believe in the concept. We will seek some initial seed funding and engage with Myanmar government officials and camps to kickstart the development process of the toolkit and seek a small camp to use as a pilot project.

## GEOGRAPHY

The team is based in different countries but intend to operate a pilot remotely and eventually form a base in Myanmar with locally based production.

Bronze Winner

# Vital Vans

**Vital Vans is a low cost, effective and sustainable solution to the problem of inadequate blood supply in Nigerian hospitals occassioned by insufficient voluntary blood donations and a weak healthcare infrastructure. It works by removing key barriers to donations using technology to recruit, connect and collect blood and then delivering it to hospitals in semiurban areas.**

## REQUESTS FOR NEXT STEPS

1. Help with fundraising or investment
2. Access to corporate partners
3. Access to incubators

## CONTACT

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## PROBLEM

Nigeria has a huge deficit of blood. With a population of 180 million, there is a blood need of about 1.5 million pints per annum.

Currently less than 500,000 is collected leading to avoidable deaths.

Out of these, over 60% is gotten from family replacement, i.e family members or friends being made to donate for patients. 40% are filled by commercial blood donors with the percentage of voluntary donations being negligible.

Nigeria accounts for the 2nd highest rate of maternal mortality in the world. 25% of these deaths are due to post partum heamaroging i.e excessive blood loss after child birth.

In addition, over 5,000 die from road accidents annually, largely from excessive blood loss.

Blood is unavailable in real time due to insufficient storage facilities, lack of electricity and inadequate voluntary blood donors, commercialisation of blood and lack of access to donation points.

A major barrier to blood donation is the lack of accessible, safe and trusted places to donate.

## SOLUTION

This problem can be easily solved with simple, low-cost and sustainable investment.

Our solution is called Vital Vans which are solar panelled refrigerated donation vans that will use intelligent fleet management I.T systems to collect blood and deliver it to hospitals that order it.

Our survey showed that 66% of people in Nigerian semiurban areas would donate to a Vital Van that came to them on pre-scheduled days. A further 13% said they would donate if the Van was safe/clean and they were sure their blood would not be sold. 61% cited acess and safety concerns as their current biggest barriers to donation and the Vital Van solves both of these. Donors get updates on where their blood is delivered to, when it's used, and reminders for their next donations.

Our IT system is able to predict the type of blood required and will use social media to target donors. Hospitals and Blood banks are able to order the quantity and type of blood they required in advance.

Bronze Winner

## INNOVATION

Our solution is unique because it inverts the existing supply chain of waiting for donors to come to blood banks.

There is an already existing private market for blood charged under hospitals operating costs which the patients are billed for.The existing model cannot cope with the demand because there has been no re-think in the way that donations are gotten.

We have surveyed our demographic population and it is evident that if we remove the current barriers of transportation, convenience, safety and trust, we will significantly increase donors and blood supply.

## IMPACT

We aim to collect an additional 50,000 pints of blood in the first year thereby reducing the blood deficit by 5% with immense potential to scale up.

This will help to reduce maternal mortality and deaths from road traffic accident thus directly impacting SDG Target 3.1 and 3.6. By increasing the supply of blood in hospitals, we will reduce the need for an expensive and unsafe blood black market thereby improving patients welfare.

We are also creating a cultural shift by educating and incentivising people on the importance and safety of blood donations. We are creating efficiency by collecting only what is needed and using technology to track and dispatch.

## NEXT STEPS

We plan to get a grant or investment to test our pilot with one van in Lagos over 6 months and collect concrete data.

This will allow us to adequately test demand scenarios compared with traditional blood banks. We will create strategies to target donors in large populations like Universities and Religious Organisations.

We will also seek out partnerships with companies for branding as an additional revenue source and to get incentives for donors.

We will develop our I.T framework or partner with existing start ups to develop the backbone for coordinating demand and supply to ensure maximum utilisation

## GEOGRAPHY

The target market is Lagos, Nigeria.

# Sustainable Consumption & Production

Gold Winner

# SmartWrapr

## Reusable Smart Pallet Wrapping

**Shrink wrap is one of the largest hidden pollutants in the world. In the United States, there are over 2 billion pallets which causes 1.0 billion pounds of petroleum waste, which 95% is expected to end up in landfills. We have developed a reuseable smart pallet cover to replace plastic shrink wrap. We can reduce the cost to customers for pallet wrapping from $1.20 to $0.60 per use and reduce environmental impact by 50% in plastic waste, 95% of petroleum use, and 80% of CO2 emissions.**

### REQUESTS FOR NEXT STEPS

1. Help with fundraising or investment
2. Access to legal and accounting resources
3. Access to corporate partners

### CONTACT

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### PROBLEM

There are 2 billion pallets in use today in the United States. Increasing consumption and global standards for transportation operations will further increase demand for pallets used to transport goods.

For each pallet transported, single-use shrink/stretch wrap is used to secure stacked cartons/boxes to prevent falling packages.

This not only represents significant one-time financial cost, but high environmental waste with little recyclability.

In the US, $3.0B dollars are spent each year on shrink warp with projected growth of 5% annually. This results in 1.0B pounds of petroleum based resin used in manufacturing, 77M pounds of wasted materials (95% is expected to end up in landfills), 450M kg of CO2.

### SOLUTION

We have created a reuseable smart pallet cover to replace plastic shrink wrap.

We will use stretchable lycra (i.e. the material in performance swimwear) with threaded ropes integrated through a handle/cinch to tighten around the pallet and ensure a secure fitting around stacked cartons/boxes in the pallet.

Product dimensions (H,W,L) are typically 1.2 x 1.2 x 1.0m which is flexible to meet 80% of global pallet dimensions.

Our per unit costs are $70 with the opportunity for 40% cost reduction with scale. Studies have shown our fabric can be durable for over 200 reuses. Accounting for reuse, our smart cover production costs are $0.35 per use compared to $1.20 cost for shrink wrap. This implies a final retail price of up to $240 for parity to shrink wrap.

Our cover is designed to be compacted to ensure better product recovery.

By cooperating with companies who reuse pallets, reusable wraps can be recovered with little additional transportation cost, labor, or training.

Gold Winner

## INNOVATION

Other shrink wrapping alternatives exist in the market and have seen little adoption because of retail costs are $150 per unit. Though rated for up to 1,000 reuses, their high upfront cost coupled with inconsistent recovery processes mean companies have difficulty realizing full cost savings.

Our difference is a lower retail cost at an estimated $120 per unit with better usability to ensure adoption.

Furthermore, by integrating a technology into a tightening mechanism, we can transform shrink wrapping from purely a cost center to an opportunity for cost savings, security, and product protection.

There can be tracking and analytics at the pallet level, security monitoring for pallet contents and notification of potential tampering and theft.

Padded can reduce carton damage, subsequent repackaging, and final product damage.

## IMPACT

Integrating financial and environmental impact will be key to ensuring adoption. On a cost to customers per unit expenses, we estimate that companies will save $0.60 per pallet wrapping with our solution. For a logistics companies like DHL and Kuehne + Nagel who collectively utilize 18M pallets per year, our pallet cover will save $7M per company per year. For retailers like Walmart and Target, this will save $13M per company annually.

We impact SDG 12-5, reducing waste. We estimate each cover will result in a net reduction of 1.67 lbs of plastic materials into landfills, save 95% of oil consumption, and 80% of CO2 emissions.

Transportation companies like DHL will be able to save 167,000 lbs of plastic, 20,000 barrels of oil, 1.8M kg of CO2 emissions.

Retailers like Walmart would save 300,000 lbs of plastic, 36,000 barrels of oil, 3.3M kg of CO2 emissions. Walmart‘s numbers are equivalent to 16 elephants of plastic, 60M km driven in a car, and 11 households shifting to solar panels.

## NEXT STEPS

We estimate we will have product, tested project implementation, and scalable production ready within 8-10 months of completing UNLEASH.

Our first step is to work with a product designer to move our prototype to MVP. We estimate this will take 8-12 weeks to iterate create a finalized design for mass production.

Our next step is our first production run in China for 1,000 units. It will take 2-3 weeks from sending the product specification to receiving final smartcovers for field testing. Working with our first client, CHEP or Kuehne + Nagel to test scaled use.

We will receive data on product use and operations within the first day for inter-city local transport operations and 3 days for cross-country transit.

We will run a 4-month pilot to understand the full durability for our estimated product life of 200 uses.

## GEOGRAPHY

SmartWrapr is headquarted in Copenhagen to work closely with UNLEASH and local partners. Product sales and distribution will be focused in the United States (Los Angeles or ) and Europe (Copenhagen) first.

The founding team lives in Germany, Sweden, South Africa, Hong Kong and Japan.


UNLEASH
– PRESENTED
#UNLEASHLAB2017

Silver Winner

# Sustainable Matching

**We are creating an online platform that allows buyers and suppliers to find each other and make connections in order to reach sustainable goals. It will be the world's first and only online supply fair for the fashion industry focused on sustainable materials. We have mocked up a prototype of the website. We estimate this tool will save a sourcer 140 days worth of work time per year. We are asking for $65,000 to cover initial start up costs. We will become profitable in our third year.**

## REQUESTS FOR NEXT STEPS

1. Advice feedback – implementation strategy
2. Legal and accounting resources
3. Fundraising and investment

## CONTACT

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## PROBLEM

We are addressing the fact that the fashion industry is not as sustainable as it could be. It is difficult to source and access sustainable raw materials, and for this reason, there is less clothing overall made out of better materials. If it was easy to be sustainable, more fashion brands would actively be producing clothing made from sustainable fibers.

Consumers want to know where their clothing came from and brands want to do better. The fact of the matter is that we need to do better, but the supply chain is fragmented. Brands aren't able to efficiently source suppliers of sustainable raw materials such as recycled fibers. There are entire sourcing departments who must travel around the world actively seeking new suppliers.

Manufacturers are also looking for business, but they can't always match.

How can we help brands and textile manufacturers source sustainable materials in order to minimize negative environmental impact and achieve more responsible use of natural resources?

## SOLUTION

We have created a functional prototype of an online platform named Sustainable Matching, which allows sourcers/buyers to easily search a database of certified manufacturers of sustainable materials related to the fashion industry.

There is a simple set of selection criteria which allows the sourcer of a fashion company to search for a specific fiber, filter by country and raw material.

We would like to improve the linear supply chain and replace it with a more circular model in which communication and matchmaking between the tiers is improved.

We are creating collaboration amongst actors in supply chains in the form of a source matching platform, in order to reach sustainable goals. This facilitates easy access, quicker connections and results in more business so that sustainable fashion becomes much more prevalent.

Silver Winner

## INNOVATION

This would be the first and only online supplier fair for the fashion industry specifically for sustainable sources.

The closest online competitor would be Alibaba, which is neither fashion specific nor sustainably slanted.

Other online resources for buyers include sites with information about sustainable suppliers, however there is no searchable database, and nothing nearly as simple to use as our platform. It takes time to find information on the web and exists nothing as expansive or collective as we hope to become.

Supply fairs/trade shows are also in existence, held about 10 times per year, but one must go in person. These supply fairs are general and do not focus on sustainable materials. “Premiere Vision” is a supply fair with 50,000 visitors and 2,000 suppliers, for an example of scale.

As these fairs are so large, an online platform would be helpful to filter which suppliers you’d like to visit at the fair. We hope to partner with supply fairs in order to gain a user base.

## IMPACT

One of our team members is a Sustainable Sourcing Manager at a medium sized fashion brand.

A platform like this when fully functional could save a buyer like her potentially 140 days’ worth of work time per year.

We estimate that we can gain 10,000 buyers who will use our platform monthly in our first year. If a third of our users make a connection each month, this will result in over 3,000 connections per month, and 36,000 in our first year.

## NEXT STEPS

We would like to assess our feedback based on the judging/selection process and any money we may win. After that, we will apply to foundations and grants, such as H&M’s Foundation which supports sustainable fashion industry innovation.

We will also pitch our idea to brands like BESTSELLER to see if they will support us. Once we have support and capital we will approach Premiere Vision, Messe Frankfurt and other supply fairs in order to gain users.

## GEOGRAPHY

Two of the team members will be located in Aarhus, Denmark. One will be in Dakar, Bangladesh. Three will be in New York. One is located in Turkey.

Bronze Winner

# Calls with Mother Nature

**If you could leave a message for Mother Nature, what would you say? “Calls with Mother Nature” is a telephone box covered in local flora, which will be placed temporarily in city squares worldwide. Nostalgic sounds of a dial up phone will entice people to reach for the receiver. The voice of Mother Nature will sound out, and the user has the opportunity to leave an audio/video message. Users can receive info on the SDGs & social causes. A simple yet powerful way that connect busy city residents with almost forgotten Mother Nature.**

## REQUESTS FOR NEXT STEPS

1. Help with fundraising or investment
2. Access to corporate partners
3. Access to incubators

## CONTACT

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Facebook: Calls With Mother Nature

## PROBLEM

Metropolitan citizens worldwide are not conscious of how their lifestyle affects the planet and their own wellbeing, due to their lack of connection to nature.

In fact, the gap in terms of connection between our early evolutionary environments and modern life is clear, and it’s growing.

Evidentially, kids are spending less time playing in natural environments compared to previous generations and in general, individuals from developed nations are spending most of their time indoors..

Research has shown that consistent personality, attitudinal, behavioral, and well-being differences are found between those who strongly identify with and feel connected to the natural world compared to those who do not.

They are simply not aware of how much their behaviour is actually affecting the planet, and what global problems we are all currently facing. For example, a survey by Eurobarometer shows that 59% of Europeans have never heard about the SDGs before, and only 12 % are aware of what they stand for.

## SOLUTION

Our solution is proposed as an awareness campaign and art installation.

We are connecting busy urban citizens with Mother Nature via a public art installation which reminds them of the lost connection to nature and what changes they should make in their daily lives.

The solution clearly touches the heart and mind and connects people to their impact on the planet by humanizing natural forces.

This solution takes the form of a phone box made from renewable materials and powered by renewable energy, placed in a busy urban area.

As tourists and residents pass, they hear the phone ring and are intrigued to come inside the box to experience an interactive exhibit, which includes a call with Mother Nature. They then hear one of several recordings, which include environmental messages designed to convey various emotions, facts about the SDGs, and tips on sustainable living. They can then leave a message for Mother Nature, which is digitally captured, preserved, and shared.

The messages can change seasonally to integrate different themes and be tailored to individual problems, personalities, and needs. The booth itself will be customized with local nature and artwork to further bring nature into urban centers.

Bronze Winner

## INNOVATION

Art installations promoting environmental agendas are not new; however, according to academic research, many fail because they are passive, exclusive (e.g. in expensive art museums), hard to measure, and not made in an environmentally sustainable manner.

Ours differs from those that have been done previously because they allow any citizen to interact with the installation and leave a message. We will be able to save the messages as story soundbites, used to create an understanding of the "mood" of the users.

The idea is very adaptable and scalable; it could also be developed to be more interactive, customizable, and educational.

We are primarily competing for busy people's time, as they will have to potentially stand in line and spend a few minutes engaging with the phone booth.

We believe the idea's originality and "surprise" factor associated with seeing/hearing a phone booth created with nature will intrigue people enough and that changing the messaging/appearance of the booth will sustain interest.

## IMPACT

Over a four month period in 15 cities, we could interact directly with 260,000 pedestrians and garner 120 million views.

We would also be measuring public sentiment around the SDGs, which could be used by governments and companies to influence communication and long-term public engagement projects around sustainability, climate change, and reconnecting with nature.

We would be able to work on the goal of "ensuring that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature" and measure increases in awareness of different SDGs.

Through increased public consciousness of the SDGs, we could then measure indicators such as number of sustainable tourism strategies, extent to which education for sustainable development is mainstreamed, and number of countries with sustainable production and consumption mainstreamed as a priority or a target into national plans.

## NEXT STEPS

We are committed to implementing this project after UNLEASH.

Our first step would be creating a non-profit organization/social enterprise that can oversee the planning, launch, marketing, and impact measurement of the campaign. We would then forge partnerships with nonprofit organizations, companies, and governments in pilot cities that can offer logistical and financial support.

We would then roll out the installation strategically by city clusters and take into account lessons learned from each city, so that we can improve our approach and tactics.

We would continue to keep the public and partners informed through social media, an online discussion community, data visualizations, and reporting on outcomes.

## GEOGRAPHY

We are team of individuals from different parts of the world with team members living in the USA, Denmark, Britain, Kenya and Bangladesh. We are, however, collaboratively working on the idea by sharing our individual inputs via the email and social media communication.

Calls with Mother Nature is set to be implemented in the city of Helsinki, Finland after which it will gradually move to other major cities across the world.

# Urban Sustainability

Gold Winner

# Demolition for Design

**Demolition for Design (D4D) disrupts the ecosystem of the built environment by mapping and auditing the materials of buildings ready to be demolished and connecting demolition experts, and their materials, with engineers, architects and upcycling manufacturers. In doing so, it not only diverts construction waste from landfill into new reuse and upcycling markets; but also improves the safety of building demolition.**

## REQUESTS FOR NEXT STEPS

1. Advice – business plan
2. Advice – implementation strategy
3. Access to legal and accounting resources

## CONTACT

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## PROBLEM

Building materials account for half of all materials used and half the solid waste generated worldwide. They have an environmental impact at every step of the building process - extraction of raw materials, processing, manufacturing, transportation, construction and disposal at the end of a building's useful life.

In the US building materials account for 40% of landfill, 30% in the EU. Cities worldwide are trying to tackle this by increasing landfill taxes and encouraging recycling of materials. However, these incentives often fail or struggle due to the lack of an ecosystem around building waste that allows for communication and transparency between stakeholders in the industry.

Currently, 70.000 houses sit empty in Detroit, 50.000 across Denmark, 19.000 across London - becoming derelict and degrading the liveability of the city. These alarming statistics led us to ask:

How can we create an ecosystem for extracting value from waste materials in the built environment?

## SOLUTION

The D4D platform disrupts the ecosystem of the built environment by connecting previously disconnected professionals, increasing knowledge of sustainable solutions and enabling value creation by diverting landfill waste into new markets.

The D4D platform has three offerings:

Data processing:
Drone operators lease a data processing service to scan buildings before demolition. The drones use reality capture to collect data about material location, quantity, dimensions, toxicity etc.

D4D Database:
The D4D Database or 'Google of demolition' archives the collected data and disseminates it to manufacturers requiring raw materials, helping them secure steady material availability and locate materials previously unavailable to them.

BIM Plugin:
Through a BIM (Building Information Modelling) plugin the database is shared with architects, engineers and contractors, allowing them new design options. Demolition companies can also access the building model to refine demolition processes.

Gold Winner

## INNOVATION

Currently the building industry works from cradle to grave with little interdisciplinary collaboration. Concepts such as design for disassembly are gaining interest, but until this reaches mass adoption, most stock being demolished will only have been designed for assembly.

D4D is a circular ecosystem-based solution to this challenge, creating a platform disseminating accurate, globally sourced information about the availability of potential material resources from the existing built environment. Uniquely D4D captures comprehensive material data and connects this knowledge directly to end-users.

Our main competitors are municipal waste handlers with established and policy-backed systems of handling waste. However, potential buyers of recycled resources often have trouble locating material streams, since municipal systems, private waste handlers' inventories etc. are not consolidated in any coherent form.

Systems like this have not been adopted simply because the technology for material scanning has only recently been developed. Incentives have also been low as landfill costs have traditionally been far lower than they are today.

## IMPACT

D4D would have a direct and substantial environmental impact by decreasing landfill and slowing down the manufacturing of new materials from exhaustible resources. By harnessing the embodied energy of existing materials we prevent the additional carbon emissions, created from manufacturing new materials, from entering the atmosphere.

D4D would also have an important social impact by providing financial incentives for disused building stock to be demolished, rather than left to become dilapidated. This would increase green spaces in cities and create more livable locales. Finally, D4D would be an accelerator for the building industry, encouraging it to develop a more circular and sustainable approach.

D4D would have an impact on 10 of the 17 SDG's. However, its primary focus is SDG 11 – Sustainable Cities and Communities. Within this SDG the key indicators we would use to measure our success include:

- 11.3 on inclusive and sustainable urbanization
- 11.6 on the reduction of the per capita environmental impact of cities
- 11.7 on the development of safe inclusive and accessible, green and public spaces
- 11.c - on supporting least developed countries, including through financial and technical assistance, for sustainable and resilient buildings utilizing local materials.

## NEXT STEPS

D4D has three central areas it must develop to move the idea forward.

Firstly, the drone technology must be tested and investigated in detail. Researchers at the University of Sydney have successfully mapped a building to aid demolition; however, our team will consult with coding, database and technology experts to develop a prototype and demonstrate the technology. Seed funding for this exploration is necessary and the team is currently investigating opportunities within their networks to gain these funds.

Secondly, the team would like to work with experts and mentors to develop a comprehensive and mature business plan, financial plan and implementation strategy.

Finally, the team will continue their discussion with key stakeholders. This includes both general interviews, to build upon their understanding of the potential users and customers for D4D and their needs; as well as specialized feedback sessions, when draft versions of their business plan and implementation strategy are available.

## GEOGRAPHY

Further research needs to be done to pinpoint the ideal geographic location.

However, at this stage the USA - because of the market scale, and the current lack of recycling, would be an appropriate market to begin. Alternatively, due to the press that we have received in Denmark for D4D, and the subsequent interest from Danish companies, Denmark is also a potential market.

Two of our team members are currently located in Denmark and one in the USA making a move into these two markets easier.


Urban Sustainability
WINNER

Silver Winner

# BirdEye

**BirdEye helps cities in low-income countries optimize and formalize solid waste management. Using drones, ground vehicles, satellite imaging and machine-learning algorithms BirdEye visualizes the location, type and amount of solid waste in cities, and estimates the potential market value of otherwise unaccounted for waste. This allows municipalities to optimize collection routes, negotiate contracts with waste management companies, develop a waste market, and prioritize high risk areas and waste.**

## REQUESTS FOR NEXT STEPS

1. Technical feasibility advice – a team member with expertise in drones, satellite images and machine learning, especially if applied to ground inspection
2. Network with potentially interested donors or investors
3. Solid waste management experts, especially if operating in low-income countries

## CONTACT

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## PROBLEM

Solid waste is posing a significant and growing global challenge. The World Bank has estimated that 57% of solid waste in low-income countries is currently unaccounted for.

This impacts public and environmental health, leads to flooding and air (methane) and water pollution. Moreover, it encourages crime as 'waste mafias' seek control over informal waste collection.

An important barrier to the formalization of solid waste management is however its associated costs.

Solid waste management already represents the largest municipal budget item in many cities in low-income countries.

Developing countries currently spend USD 45 billion on solid waste management but the World Bank estimates that this is very likely to double if effective solutions to improve and formalize waste management are not adopted.

## SOLUTION

BirdEye helps cities in low-income countries optimize and formalize solid waste collection and turn solid waste into a source of income.

BirdEye utilises drones, ground vehicles and satellite imaging to identify the location, amount and type of solid waste in illegal dumpsites in cities e.g. thermography for biodegradable waste and spectral signature for plastic and glass. Leveraging a machine learning algorithm, BirdEye regularly inspects dumpsites and estimates waste characteristics and predict changes in the waste "inflow".

The collected data will be available through an online open access portal. An interactive heat-map will show where, what and how much waste is in the city and the portal will further provide a price estimate for each material identified to enable a marketplace for solid waste (i.e. turning waste into a marketable resource).

Silver Winner

## INNOVATION

Data-driven decision making:
By identifying, classifying and quantifying the solid waste in illegal dumpsites BirdEye provides municipalities a data driven decision-making tool to take informed actions and deal with unaccounted for waste.

Turn waste into a marketable resource:
The BirdEye platform displays current market prices for materials and allows municipalities to make materials available to businesses and municipalities in their region. A Dutch auction system may be used.

Affordability:
Cities need to better understand waste streams to enable decision-making on solid waste management and cut the costs of collection.
BirdEye provides a “pay-as-you-scan” pricing system, which allows mayors to pay for data, but avoid big investments in drones and ground vehicles.

Technology:
Drones and satellite imaging is increasingly used for dumpsite inspection and to identify illegal dumpsites (e.g. in Australia and USA).
The technologies are also increasingly used in low-income countries, though not yet for solid waste management.

## IMPACT

BirdEye generates value for multiple players in the urban ecosystem.

Citizens:
More efficient solid waste management and targeted interventions can increase the liveability of urban neighbourhood and improve public health.

Governments:
Able to optimize operations, collection routes, and better manage municipal budgets (cut costs). Solids waste is turned into a marketable resource.

Informal waste collectors:
Data opens up for competitors and encourages municipalities to formalise and regulate solid waste management as to decrease crime associated with informal waste collection.

Local businesses:
Local businesses gain access to local material marketplace (beyond the international platform - Ariba), where they bid on waste (i.e. a resource they need) for the best price.

SDGs:
Helps fulfill SDG goal 11.6: „By 2030 reduce the adverse per capital environmental impact of cities“ and specifically targets indicator 11.6.1, by increasing „proportion of urban solid waste regularly collected and with adequate final discharge“.

## NEXT STEPS

The BirdEye team is currently working to:

- Verify the technical feasibility of BirdEye through interviews of field experts and solid waste collection operators
- Present the idea to relevant stakeholders, partners and potential investors
- Explore possible business models

The BirdEye team will later:

- Explore funding opportunities and engage development banks and large international donor organisations, as well as potential support from the private sector
- Explore potential partnerships with satellite image and drone providers

## GEOGRAPHY

The BirdEye team is currently located in Tel Aviv (Israel), Zurich (Switzerland), Nairobi (Kenya), Sydney (Australia).

Bronze Winner

# Recovering Giants

**There is limited information on building materials to support cities identify recyclable materials within rubble post earthquakes. Recovering Giants provides a spatial simulation tool that assesses the amount and location of building materials following an earthquake. This is an innovative solution for governments and agencies in environment and disaster preparedness as it provides strategies on how to maximize recyclable building materials while reducing cleanup time post earthquakes.**

## REQUESTS FOR NEXT STEPS

1. Access to corporate partners
2. Advice / feedback – technical advice
3. Advice / feedback – implementation strategy

## CONTACT

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## PROBLEM

Earthquakes are predicted to increase in frequency and magnitude. Associated to this disaster is that a large portion of the rubble ends up in landfills and very little recyclable building materials are diverted.

The core reason for this is that cities do not have adequate information beforehand on the amount and location of salvageable materials in the rubble at the time of the disaster. Thus, because diverting building waste from landfills is not at the forefront of disaster planning, it does not happen post.

A study on disaster recovery from Penn. State University argues that “all communities eventually recover from disasters”. However, the longer the cleanup the worse off the entire community is. Lack of accurate building material information makes recycling difficult.

If value was added to the management of rubble post-earthquakes in pre-disaster planning, cleanup and recovery could be accelerated.

## SOLUTION

We provide spatial simulation tool for municipalities and governments to assess the quantity, type, and location of salvageable building materials pre- and post-earthquakes to accelerate the cleanup process and capture value from the rubble.

The simulator inputs existing city building material composition into a disaster scenario simulator to predict where the materials would be located and how much would be reusable. As a non-profit entity, our simulator will support municipalities and agencies involved in disaster preparedness.

Where a database for building materials does not exist, we will work with the municipality to establish such a database. In the event an earthquake, Recovering Giants would update our simulation based on real-time data to support the cleanup efforts.

Bronze Winner

## INNOVATION

The innovation of this solution is that it leverages existing technologies for new uses. It combines a database of building materials and earthquake simulation tools to map the location, type, and quantity of recyclable materials post-earthquakes. It also provides cleanup strategies.

There are two tiers of potential competitors: organizations that collect data on building materials (EPA Recovery Database, Quartz) and disaster simulation software firms (Esri Sim Disaster, Hazus) and disaster management agencies who may choose to do this in house.

The solution has not been implemented because:

1. Many cities neglected the fact that much of the rubble/debris post earthquake is salvageable and recyclable.
2. Poor regulations currently do not require municipalities and recycling companies to recycle or reuse building materials
3. It is difficult to build a viable business model on a for-profit-basis because of the unpredictable nature of earthquakes and the level of destruction.

## IMPACT

This solutions will address several SDGs includinng indicators for Goals 1, 11, 12, 13 and 17.

The indicators include:

1.5.2: Direct disaster economic loss in relation to global gross domestic product (GDP);

11.5.2: Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services;

12.2.1: Material footprint, material footprint per capita, and material footprint per GDP;

12.5.1: National recycling rate, tons of material recycled;

13.3.2: Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions;

17.14.1: Number of countries with mechanisms in place to enhance policy coherence of sustainable development;

17.19.1: Dollar value of all resources made available to strengthen statistical capacity in developing countries.

## NEXT STEPS

1. Market assessment: We will conduct further assessments of companies and software existing for scenario analysis of earthquakes in cities. We will also assess companies and agencies with existing databases for building materials for cities.

2. Financial sustainability models: We will elaborate our cost projections and revenue needs in order to roll out the prototype in 4 cities over the first 2 years.

3. Develop prototype of the simulator

4. Seek seed funding: We will seek funding via grants for development of the prototype and deployment in 2 years in 4 cities prone to earthquakes.

## GEOGRAPHY

The team is based in Kenya, the United States, Iraq, Japan, and Macedonia.

# Water

Gold Winner

# UNLEAK

## Free leak detection for all

**Leaks inside homes lose enough water to serve 600 million people each day. UNLEAK will fix this in water stressed cities by offering free leak detection and cheap repairs to all. Using a method to check for leaks from outside homes, we will audit entire neighborhoods at once. We will coordinate bulk discounts from plumbers and offer heavily discounted repairs to leaking households. Plumbers will pay us a referral fee for driving business to them. We expect each 100 houses to cost us $13 to audit and generate $30 in revenue. In this way we will profitably and scalably reduce water consumption in water stressed cities.**

### REQUESTS FOR NEXT STEPS

1. Help with fundraising or investment
2. Advice / feedback - technical advice
3. Access to corporate partners

### CONTACT

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### PROBLEM

Water that could serve 600 million people is lost through undetected leaks in grid connected homes every day. Utilities have little incentive to take action since the water is being paid for, and consumers are usually unaware of the prevalence and magnitude of water loss from leaks in their households.

In water stressed cities, every drop matters. This kind of water wastage can have a huge impact on people's lives. If we could simplify the process of leak detection and repair, a significant amount of water could be conserved and redirected to the community, lifting stress both from the people and the environment.

### SOLUTION

We propose a four step solution to find and fix household water leaks:

1. Check for leaks: Conduct free leak audit of a neighborhood. We do this by inspecting each house's meter (which is often located on the street) for flow. If there is flow, we return to check again up to 2 more times, before concluding that the flow is caused by a leak. This process is coordinated through our app.
2. Build awareness & obtain customers: Drop a flyer in the mailboxes of all leaking homes, notifying them that they have a leak, the likely cost of the leak, and asking them to sign up for a plumber who will do a bulk repair of their neighborhood at a heavily discounted rate.
3. Fix leaks: Customers book a time with the plumber through our call centre or website, and plumber fixes all leaks in bulk.
4. Use referral fees to scale: Plumber pays UNLEAK a referral fee which funds audits of new neighborhoods and generates profits.

Making home owners aware of leaks and removing the requirement of active action from them would enable them to save water and money (on water bills and on leak repair). The conserved water reduces environmental stress and strain on city water infrastructure.

Gold Winner

## INNOVATION

Our business model allows us to profitably detect leaks for free and enable cheaper repairs: 1. We remove barriers to households fixing leaks by identifying leaks, building awareness, and reducing the cost to fix. 2. We align incentives between plumbers and households: plumbers make more money by better utilizing their time; households reduce the cost of fixing leaks.

In markets with smart water meters, some utilities use consumption data to alert households of potential leaks. However, most water-stressed cities are located in regions where smart water meters are not present. When these are eventually rolled out, they will likely first go to the highest value customers, leaving the most vulnerable people neglected for many years.

This approach has not been tried for three reasons:

1. Utilities are not incentivized: they are paid for water leaks inside homes, and rather focus resources on non-revenue water.
2. Plumbers lack relevant skills: plumbers are generally not experts in developing innovative business models and logistics systems.
3. Households lack awareness: the prevalence and cost of leaks inside homes is not widely known.

## IMPACT

UNLEAK will impact water, environment and energy.

The US Environmental Protection Agency estimates that fixing one tap cuts an average household water bill by 10%. Utilities also benefit by being able to redirect the water saved to other households instead of investing in new capacity. The water conserved saves energy that would have been spent on producing water and treating wastewater, which is typically 30-40% of a municipality's energy consumption budget. In turn, we will reduce the carbon footprint and environmental stress of these plants.

UNLEAK will generate more business for plumbers and create employment for unskilled workers with a focus on youth from low-income groups and women who would be trained to gather data through our app.

Our solution relates to target 6.4 regarding water-use efficiency and hence the following indicators can be used as a measure of our success: 6.4.1 Change in water-use efficiency over time. 6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources.

## NEXT STEPS

1. Further validate business model
   - Test replicability in Cape Town: conduct audits in 2 additional neighborhoods to validate our ability to find leaks
   - Validate conversion rates: run pilot in 2-3 neighborhoods in Cape Town in partnership with a plumbing company, measuring the proportion of leaking households that take up our offer
   - Validate in other markets: use the global footprint of our team to test key business model assumptions in China, India, Ethiopia, Ghana and Israel

2. Build team, systems and partnerships:
   - Hire team, including general manager, operations manager, leak surveyors, call center staff and supervisors
   - Develop website, app and market collateral
   - Enter partnerships with sufficient plumbing companies to fix leaks at the pace at which we intend to audit

3. Scale:
   - Conduct city-wide leak detection audit in Cape Town, growing incrementally one neighborhood at a time
   - Expand into other water stressed cities in South Africa and globally

## GEOGRAPHY

The team is based in Ghana, South Africa, the Netherlands, India, Israel and China.


Water
WINNER
Winner
GOLD
WATER
LOW IMPACT

Silver Winner

# Alter Alternatives to Water

**Freshwater sources are become increasingly depleted, and the costs of new technologies such as desalination remain high and energy intensive. Collectively, we need to preempt increased scarcity through uncapping alternative sources. Hidden around us is a water resource with limitless potential. By developing proper technology, based on the condensation through proper design, we will collect water from waste steam. We will focus on both domestic and an industrial scale.**

## REQUESTS FOR NEXT STEPS

1. Access to legal and accounting resources
2. Help with fundraising or investment
3. Advice / feedback - implementation strategy

## CONTACT

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## PROBLEM

This project addresses current and emerging water scarcity on a global scale. We realized that conventional water sources (groundwater and seawater) are not adequate means to compensate for the global water crisis for near future. After a research for a decade also, these are not able to be a reliable resource.

With this in mind, we focused on an alternative water source that is hidden all around us. Condensation of steam and humidity is a process from which we can gather water. It has enormous potential to be utilized through relatively simple technologies.

This insight inspired us to work towards developing methods of harvesting water from steam and humidity.

## SOLUTION

We propose to gather water through a simple process condensation in two contexts, one at a domestic scale and one at the industrial scale. Mostly the proper design will do the job for us with minimal energy or no energy input.

1. At the domestic level, valuable water is lost through steam while cooking. Through creating a pot lid that captures this moisture, we can take advantage of habituated actions and use the untapped water in food (90% or more in vegetables). This lid traps water as food is cooked which can then used in domestic use.

2. Scaling this concept up to the industrial scale, every major factory from electric to fashion, emmits water through steam. 40% of inputted water is lost this way. Through a mechanism that traps the water as it comes out as steam, cools it, and stores it, this water can be recycled for the industry or reintroduced into a water grid.

Silver Winner

## INNOVATION

Our solution is a low tech high yield method of harvesting water from a hidden source through proper designing.

Generally steam and humidity are overlooked as a source of water even though they are everywhere.

This oversight is due to major water investor's perceived abundance of water from other sources and their investment in improving management rather than innovating around new alternatives. Steam and humidity are invisible, water is hidden in air, and has not yet been tapped into in on a large scale. It is easily available and plentiful through low tech solutions.

Though there is current research on humidity harvesting, the solutions proposed technology and cost intensive, and do not address steam loss.

Most the challenging thing is to convince the large industries who are getting water at a lower price because of available ground water but do not value water.

## IMPACT

The impact of our steam harvesting methods on both domestic and industry level have the potential to create a major impact on a massive scale: the pot lid will take the SDG of gender equality/women empowerment into account.

These women will have to carry less water, relieving them from this physical burden, and will be able to provide their families with safe drinking water, at this moment covering the SDG of health.

The steam harvesting in industries will make sure that the impact of human-made climate change is limited: currently, the water vapor coming from the factories' chimneys is binding with aerosols resulting in aerosols and causing mist, global warming finally climate change.

This solution also addresses the SDG of sustainable production and consumption and innovates around the industry.

## NEXT STEPS

We want to establish a strong technical partnership in order to realise both solutions and explore the potential of condensation even further. In the end, we want to establish that condensation is seen as an important fresh water source next to groundwater, rainwater an seawater.

Let's create some awareness!

## GEOGRAPHY

The team is based in India, the Netherlands, the United Kingdom and the United States of America.

Bronze Winner

# How much water do you eat?

**Given that 70% of water resources are used by agriculture, and that extensive research has been done on the water footprint of agricultural goods, it is surprising that consumers are not aware of how much water is used for the products they consume. This project aims to inform consumers of their water footprint when making an online purchase decision - focusing on the growing online grocery shopping market - and educating them with personalized water footprint report cards.**

## REQUESTS FOR NEXT STEPS

1. Access to corporate partners
2. Advice / feedback - implementation strategy
3. Help with fundraising or investment

## CONTACT

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## PROBLEM

Agriculture is the main agent responsible for freshwater consumption in the world, and the general public is not fully aware of the water deployed to produce food. A lot of research has been done around the issue of water footprint and is indeed available to the public.

However, this information is not effectively transmitted and communicated to consumers. Hence, in practice consumers do not have information on the pressure they exert on water resources (water footprint) to inform their choice when buying food products at the point of purchase.

Consequently, producers are not incentivised by consumers to reduce their impact on water resources throughout the supply chain and become more sustainable. As a result, water stress is increasing in food-producing countries that are at risk of water scarcity.

## SOLUTION

This project specifically targets consumers using online grocery platforms and aims to provide them with information about the water footprint of the products they buy.

Specifically, a water footprint report card is sent along the delivery package containing an overview of their water consumption for each product. On the back side of the report a very basic and comprehensive diagram of the most water intensive product is presented showing the process of its supply chain. In fact, the diagram illustrates that water was used in several stages of the process.

Furthermore, the product description contains the water footprint of the product.

As a result, every time consumers make a purchase they are more aware of their personal water footprint.

Therefore they are more likely to change their behaviour and consequently change the demand. This will have an impact on the supply in the long term driving producers towards innovation and sustainability.

Bronze Winner

## INNOVATION

A lot of research has been conducted to quantify the water embedded in goods, resulting in the concept of water footprint.

Organizations like “Water footprint network” have calculated the water footprint for a wide range of products.

The reason our solution is unique is because the project draws the consumer’s attention and awareness by providing personalized information according to what the consumer just bought and therefore pointing out their own impact.

Our approach aims to make this valuable information not only more accessible, but also to ensure that this information is provided when it is relevant for the decision process.

This solves a common frustration: one learns about the importance of environmental friendly behaviour, but does not know how to translate this into everyday actions.

Other product labels try to achieve similar objectives, hence could be seen as competitor as they also desire attention from the consumers.

## IMPACT

We raise awareness of the consumers of how their food consumptions impacts water. For this reason, this project is relevant and will generate both direct and indirect effects to several SDGs, including: SDG 2, SDG 6, and SDG 12.

The educational aspect aligns with the SDG 12.8 (awareness for sustainable development and lifestyles).

A part of the consumers is known to take environmental impact into consideration when making purchases (for example to favour fair-trade or organic products).

Hence, indirectly this education may contributes to the SDG 6.4 (ensure sustainable water withdrawals).

Furthermore, analysis of sales data could reveal changes in user behavior.

## NEXT STEPS

We plan to stay in touch and get in contact with the organisations working on the Water Footprint to get further feedback.

Furthermore, we plan to reach out connecting with key-decision makers of online grocery stores to find partners.

## GEOGRAPHY

The team is located in the United States of America, Lebanon, South Africa, Singapore, Denmark and Switzerland.


Thank you!
See you at #UNLEASHLAB2018!

**For more information, please visit:**

**www.unleash.org/solution-catalogue**

**contact@unleash.org**