



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



COVID-19  
RESPONSE

# UNIDO Global Call for Innovative Ideas and Technologies vs. COVID-19 and beyond

An initiative organized by  
the UNIDO Investment and Technology Promotion Network





## BACKGROUND INFORMATION

### Origin of the Global Call

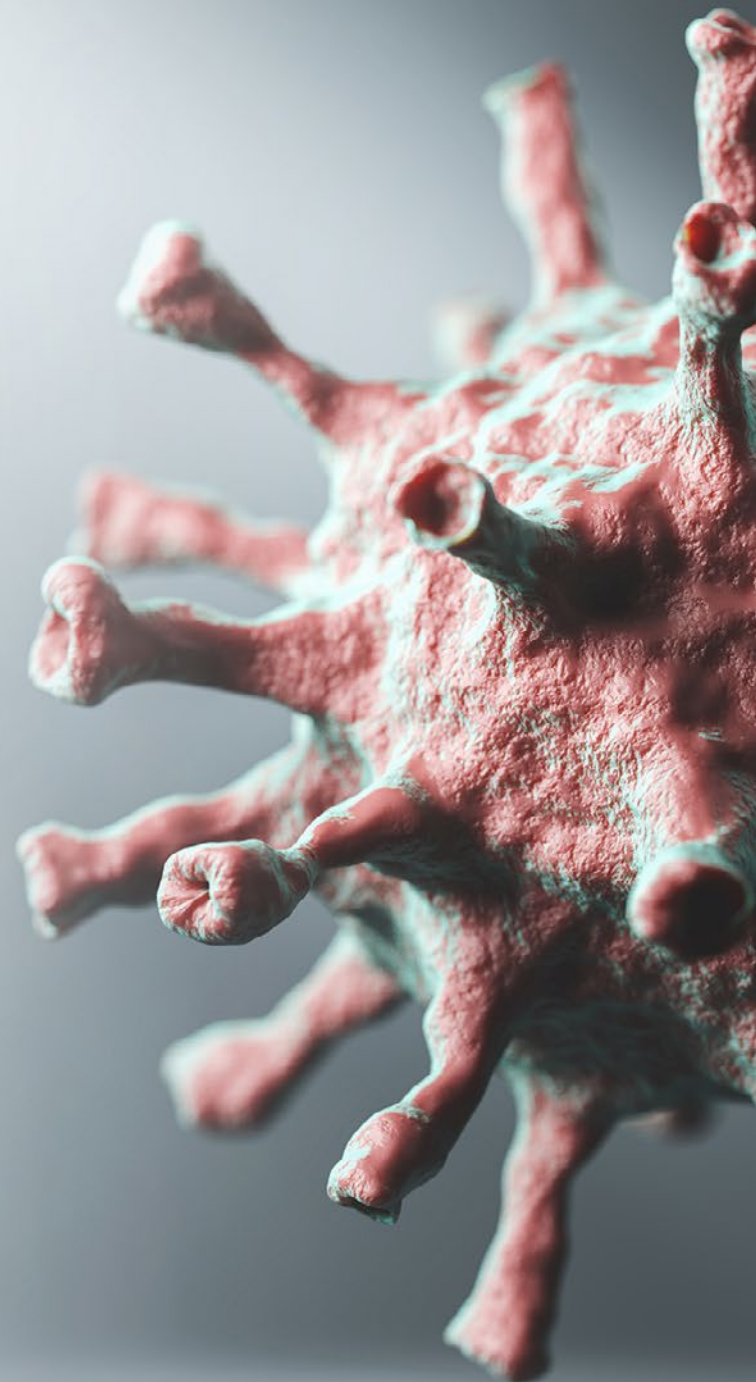
The ongoing COVID-19 pandemic has been the most disruptive in a century, putting an immense strain on societies and economies around the world. As the pandemic unfolds all over the world, countries are not only facing a health and humanitarian crisis, but also major disruption across economic and social sectors, in an already fragile world economy.

The socio-economic impacts of the COVID-19 pandemic are expected to be far-reaching in terms of income losses and unemployment, with vulnerable actors and sectors around the globe facing the highest risk. Developing countries, particularly least developed countries, as well as economies in transition are disproportionately threatened by this health crisis and by the associated socio-economic impacts in the short and medium to long-term.

In order to address the challenges associated with the COVID-19 pandemic, the UN has called for a comprehensive response to and recovery from this crisis that will leave no one behind and that addresses the very issues that made countries and economies so vulnerable to the effects of the pandemic in the first place.

The United Nations Industrial Development Organization (UNIDO) has an important role to play as part of the UN system and as specialized agency on industrial development. UNIDO's mandate of inclusive and sustainable industrial development (ISID) is very relevant to support inclusive and sustainable economic recovery of developing countries and their productive sectors. UNIDO is working with its Member States and other UN agencies to support developing countries to first respond to the crisis, and then recover better, building more equal, sustainable and resilient economies through ISID.

As part of the UNIDO response to the challenges posed by the COVID-19 pandemic, a global competition for innovative ideas and technologies to help fight the consequences of COVID-19 was launched in June 2020. The Global Call was envisaged and planned by the UNIDO Investment and Technology Promotion Office (ITPO) Italy and was hosted and organized by the entire UNIDO Investment and Technology Promotion (ITP) Network with its nine ITPOs.









# Global Call for Innovative Ideas and Technologies vs. **COVID-19** and beyond

## Objective

The Global Call for Innovative Ideas and Technologies vs. COVID-19 and beyond sought to identify readily deployable solutions and technologies to assist countries in responding to the various detrimental effects of the crisis brought about by the outbreak of COVID-19. The Global Call was open for applications from 3 June to 30 June 2020 to a variety of stakeholders ranging from micro, small and medium enterprises (MSMEs) to large corporate entities; from startups to research centres, incubators, technology transfer offices, representatives from academia, public-private partnerships; associations, business consortia, NGOs and private foundations.

The submission of proposals at all stages of development were encouraged, from early stage ideas to already scaled-up projects, including also innovative technologies under testing and evidence collection, as long as they fell in to one of the following four categories of the competition:

 <b>ENERGY AND ENVIRONMENT</b>	<ul style="list-style-type: none"><li>» Medical waste management and recycling</li><li>» Renewable energy for health-care</li><li>» Water management</li></ul>
 <b>FOOD AND AGRICULTURE</b>	<ul style="list-style-type: none"><li>» Smart food logistics and distribution</li><li>» Urban farming</li><li>» Inclusive local market ecosystems</li></ul>
 <b>HEALTH EMERGENCY</b>	<ul style="list-style-type: none"><li>» Telemedicine</li><li>» Biotechnologies and digital health</li><li>» Prevention and control</li></ul>
 <b>RESILIENT INDUSTRIES AND INFRASTRUCTURE</b>	<ul style="list-style-type: none"><li>» Manufacturing of protective and medical equipment</li><li>» Distributed networks and fabrication laboratories (“fablabs”)</li><li>» New organizational models</li></ul>



## FACTS AND FIGURES

The Global Call reached a high number of interested participants from all over the world and over 1,100 applications were submitted by a variety of stakeholders from 108 countries.

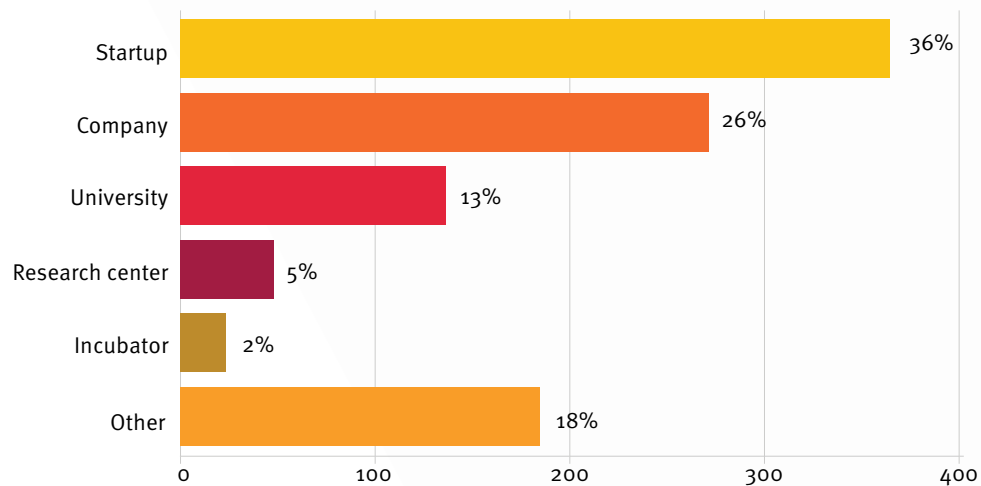
To address the effects of COVID-19, most proposals focused on the “Health Emergency” and “Food and Agriculture” categories, engaging in the response to the ongoing sanitary crisis and the severe repercussions on food shortages and global food supply chains.

Many submissions were also received within the categories “Energy and Environment” and “Resilient Industries and Infrastructure”, promoting fundamental solutions to ensure a successful and sustainable economic recovery following the outbreak of the pandemic.

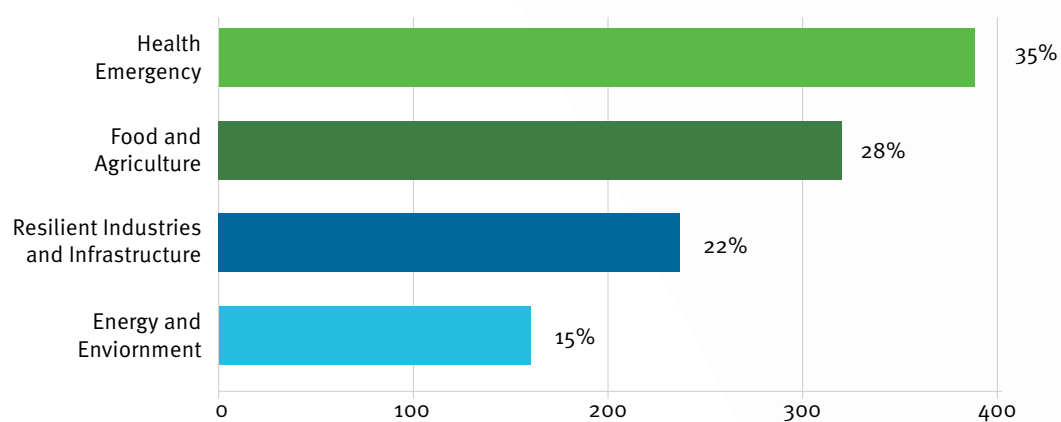
Diana Battaggia, Head of UNIDO ITPO Italy commented, “We are extremely proud of the great number of participants joining our Global Call and sharing their innovative ideas from all over the world, notably during these challenging times. In this spirit, our initiative will facilitate knowledge-exchange, economic partnerships and international cooperation towards the achievement of the UN Sustainable Development Goals (SDGs)”.



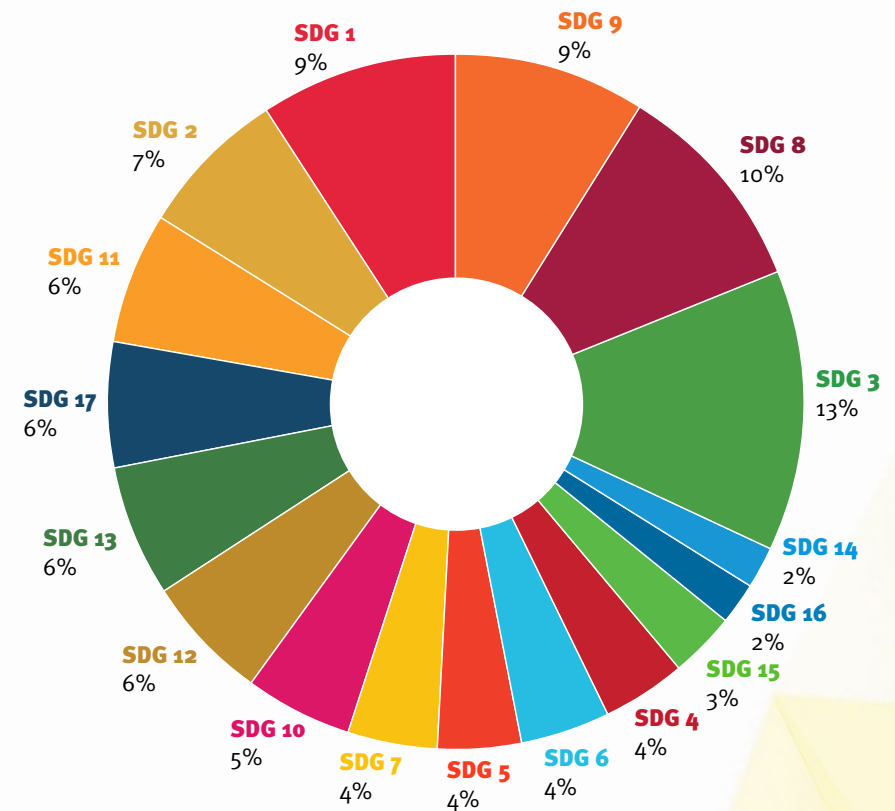
## Applicants



## Applications by Award Category



## SDGs covered



## EVALUATION



### Evaluation criteria

Following a shortlisting of proposals prepared by ITP Network colleagues, the applications were evaluated by a jury composed of the Heads of all UNIDO ITPOs, other UNIDO staff members, as well as external experts.

Due to the close voting returns from the jury, two winners were identified for the Health Emergency category, while one winner was identified for the Energy and Environment, Food and Agriculture, Resilient Industries and Infrastructure categories of the Global Call.

	Innovative content of the proposal	40%
	Environmental, social and economic long-term sustainability	30%
	Scalability and possibility of extension in different geographical contexts	20%
	Expected occupational return	5%
	Applicants' financial involvement	5%

# JURY MEMBERS



**MS. DIANA BATTAGLIA**

Head of UNIDO ITPO Italy



**MR. HYUNDONG CHO**

Head of UNIDO ITPO Korea



**MR. HASHIM HUSSEIN**

Head of UNIDO ITPO Bahrain



**MR. SERGEY KOROTKOV**

Head of UNIDO ITPO Russia



**MS. MARISA MARINI**

COO, World Manufacturing Foundation



**MR. ALOIS MHLANGA**

Chief, Global Cleantech Innovation Programme (GCIP) and Climate Technology and Innovation Division, UNIDO



**MS. SARA ROVERSI**

CEO and Founder, Future Food Institute



**MR. ROLF STELTEMEIER**

Head of UNIDO ITPO Germany



**MS. CECILIA UGAZ ESTRADA**

Chief Advisor, Office of the Managing Director, Directorate of Corporate Management and Operations, UNIDO



**MR. YABIN WU**

Head of UNIDO ITPO Beijing



**MR. YUKO YASUNAGA**

Head of UNIDO ITPO Japan



**MS. XIAOLEI ZHAO**

Head of UNIDO ITPO Shanghai

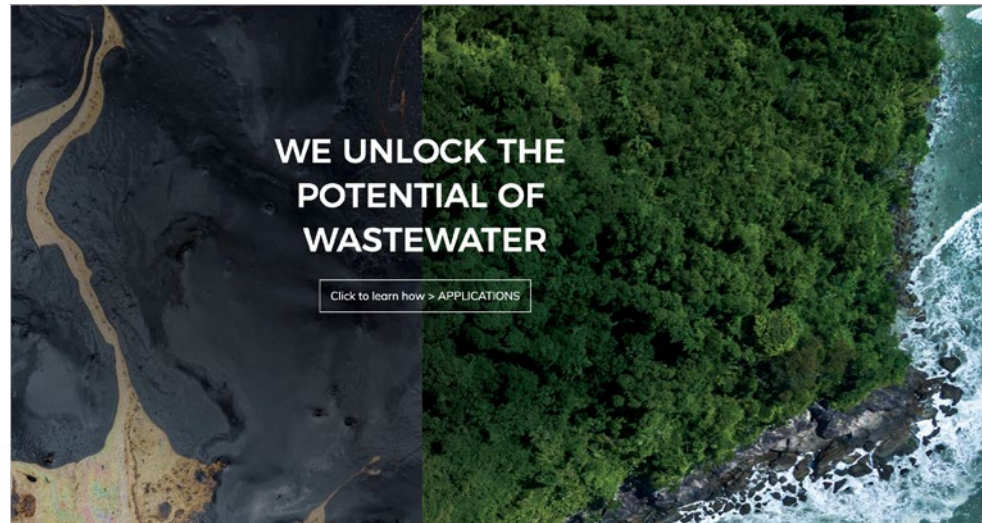
# WINNING PROPOSALS

## ENERGY AND ENVIRONMENT CATEGORY

### EcoWorth Tech (Singapore)

EcoWorth Tech provides a breakthrough solution for the removal and recuperation of organic contaminants from wastewater. It uses an innovative and sustainable technology called 'Carbon Fibre Aerogel' to transform wastewater into water that can be reused or released into the environment safely, providing several environmental benefits and waste-to-worth opportunities.

**Mr. Andre Stolz, CEO - EcoWorth Tech Pte. Ltd.** Andre is an agile tech entrepreneur and innovation leader with 19 years international experience in startups management, building ventures, initiative and portfolio management, engineering, product development, supply chain and manufacturing. He left his corporate career in order pursue work with a view of improving society and the environment. Andre is active in nurturing the next level of entrepreneurial leaders through mentoring and coaching.



Mr. Andre Stolz,  
CEO - EcoWorth Tech Pte. Ltd.

## FOOD AND AGRICULTURE CATEGORY

### ColdHubs (Nigeria)

ColdHubs is a social business that designs, installs and commissions 100% solar powered walk-in cold rooms in farms and marketplaces, to enable smallholder farmers, retailers and wholesalers to store and preserve fresh fruits, vegetables and other perishable food. ColdHubs thus extends the shelf life of fresh produce from 2 days to 21 days, which is particularly useful in view of the restrictions on movement put in place in many countries to halt the spread of the coronavirus. ColdHubs aims to eliminate the impact of food spoilage and lack of small scale post-harvest infrastructure facing 470 million smallholder farmers globally and increase the income of farmers and retailers through eliminating those losses.

**Mr. Nnaemeka Ikegwuonu, Founder and CEO ColdHubs Limited.** Nnaemeka is a farmer, community radio agricultural presenter; Founder and CEO of ColdHubs Limited and Executive Director of Smallholders Foundation Ltd. /Gte. He founded Smallholders Foundation in 2003 at the age of 21. The organization uses its Smallholder Farmers Rural Radio (FARM F.M) Network to reach an estimated 250,000 farmers with daily agriculture, environmental management and market access, radio educational messages.

Nnaemeka is an Ashoka Fellow 2008, Laureate of the Rolex Awards for Enterprise 2010, Laureate WISE Awards 2010, Future Awards Nigeria's Young Person of the Year 2011, Fast Company USA 100 Most Creative in Business 2012, Laureate of the Niigata International Food Prize, Japan 2012, and 2013 Laureate of the prestigious Yara Prize for Green Revolution in Africa (now Africa Food Prize) among other international and local recognitions.



*Mr. Nnaemeka Ikegwuonu, Founder and CEO ColdHubs Limited.*



## HEALTH EMERGENCY CATEGORY

### Indoor real-time dynamic air and object surface disinfection

(China)

indoor real-time dynamic air and object surface disinfection is a low-cost electrochemical disinfection technology which uses oxygen and water in the air as raw materials with no requirement for any consumables. This new disinfection method can be continuously used in crowded places, which can effectively block the diffusion of the virus. Through the intelligent control mode and micro manufacturing technology, the dynamic disinfection equipment is safe and harmless to humans. This high-efficiency, low-cost new disinfection method has become an effective measure to inhibit the spread of COVID-19 in public buildings.

**Mr. Zhang Wei, Founder, Shanghai Zhizhong Environmental Protection Technology Co., Ltd.** As the leading electrical engineer at Shanghai Zhizhong Environmental Protection Technology Co., Ltd., Wei is committed to the research of low-temperature plasma discharge technology using oxygen in the air as raw material for air and object surface disinfection and cleaning. Through long-term joint efforts of his team, he has developed a new special manufacturing process, eliminating technical problems of ozone harmful derivatives in the disinfection process.



#### DYNAMIC DISINFECTION IN PUBLIC PLACES

**MODEL : ZDBL-III**  
VOLTAGE : AC100 ~ 240V  
POWER : 6W  
SIZE : 190×190×50mm  
WEIGHT : 0.8kg  
NOISE : 26db  
TEMPERATURE : -20 ~ 70℃ < 90%



**Dynamic air and surface disinfection:**  
An effective active disinfection method without interference and harm to environment and people.

**Realization mode and technical route:**  
Adopting low temperature plasma dielectric barrier micro discharge process and micro manufacturing technology

**Technical breakthrough and core value:**  
Ozone purification and compound disinfection factor function realize safe and efficient disinfection



#### INNOVATIVE IDEAS AND TECHNOLOGIES VS COVID-19 AND BEYOND

**DEFECTS OF TRADITIONAL DISINFECTION**



**INNOVATIVE TECHNOLOGY OF DYNAMIC DISINFECTION**



**REMOVAL RATE**

Microorganism	99.93%
TVOC	95.4%
Ammonia	94.2%

TUV SUD PSB Products Testing (SHANGHAI)





*Mr. Zhang Wei, Founder, Shanghai Zhizhong Environmental Protection Technology Co., Ltd.*

## HEALTH EMERGENCY CATEGORY

### ECO4CO

(Italy)

ECO4CO is an Earth cognitive system for COVID-19 based on satellite and geo-information technology. The main goal of this system is to provide rapid spatial insights and evidence about geo-localized events that may impact on the COVID-19 outbreak. The related services are based on the synergies between social and human information business intelligence that automatically tasks Earth observation satellite acquisitions using both SAR and OPTICAL payloads. ECO4CO is the result of a joint effort of Telespazio's Satellite Systems and Operations engineering team and e-GEOS' AI/Big Data Analytics and Emergency teams, (e-GEOS is a geoinformation company set up by Telespazio (80%) and the Italian Space Agency (ASI)).

**Mr. Stefano Beco, Head of Technology, IPR and Product Policy at Telespazio.**

Stefano obtained his degree in Electronics Engineering at University of Tor Vergata in Rome in 1988 and began his career in Datamat S.p.A. as a software engineer for mission simulation. He then moved to space systems and applications domain, leading the Datamat team for the Phase B1/C/D/E of European Space Agency's ENVISAT-1 satellite User Services. After a few years, he held the management responsibility for all R&D projects related to distributed computing infrastructures

and services, targeting the space domain usage and services. With Telespazio since 2011, Stefano was Head of Satellite Ground Segment and On-Board Software, managing projects like the development of the Control Bench and the Flight Programme Software for the European small launcher VEGA. In 2017 he became Chief Technology Office and since then has been responsible for the Product and Technology Innovation Plan for the whole Telespazio Group.



*Mr. Stefano Beco, Head of Technology, IPR and Product Policy at Telespazio.*



## RESILIENT INDUSTRIES AND INFRASTRUCTURE CATEGORY

### plasticpreneur (Austria)

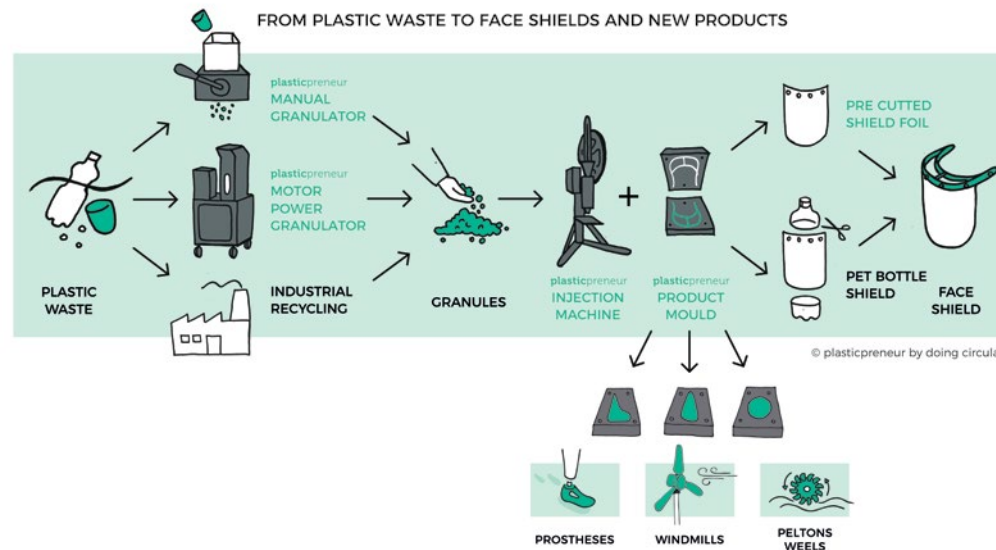
plasticpreneur develops and provides easy access, cost-efficient, small-scale plastic recycling machines alongside offering social entrepreneurship skills, thus empowering grassroots organizations to turn plastic waste into new products. This combination enables the creation and launch of innovative and essential products, such as face shields, while building environmental awareness and setting up new social businesses around the world.

#### Mr. Sören Lex, Co-founder and CEO, plasticpreneur

Sören is a passionate impact creator and was involved in different social innovation projects during his studies of Business Administration. Those projects turned into his profession - and he is one of the Co-Founders and CEO of plasticpreneur as well as of the Product Life Institute Austria. His focus lies in implementing frugal innovation through combining circular economy and social entrepreneurship principles and concepts. In various travels to different (mainly sub-Saharan African), countries he is trying to co-create solutions for needs and markets with local communities and organizations.



Mr. Sören Lex, Co-founder and CEO,  
plasticpreneur



# AWARD CEREMONY

## Speakers



**MR. BERNARDO CALZADILLA-SARMIENTO**

Managing Director, Directorate of Digitalization,  
Technology and Agri-business



**MS. DIANA BATTAGLIA**

Head of UNIDO ITPO Italy



**MS. XIAOLEI ZHAO**

Head of UNIDO ITPO Shanghai



**MR. STEFANO BECO**

Head of Technology, IPR and Product Policy,  
Telespazio



**MR. ZHANG WEI**

Founder, Shanghai Zhizhong Environmental  
Protection Technology Co. Ltd.



**MS. RAPHAELA EGGER**

Co-founder and CD, plasticpreneur



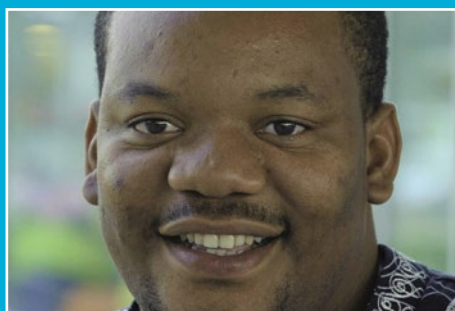
**MR. SÖREN LEX**

Co-founder and CEO, plasticpreneur



**MR. ROLF STELTEMEIER**

Head of UNIDO ITPO Germany



**MR. NNAEMEKA IKEGWONU**

Founder and CEO, ColdHubs Limited



**MR. ANDRE STOLZ**

CEO, EcoWorth Tech Pte. Ltd.



**MR. WEIXI GONG**

Chief, Investment and Technology Promotion  
Division, ITP Network Coordinator, UNIDO



## CEREMONY

The winners of the Global Call for Innovative Ideas and Technologies vs. COVID-19 and beyond were announced during an Award Ceremony, conducted as a live online event on 14 July 2020.

The Award Ceremony was attended by more than 400 participants. The ceremony marked the conclusion of the initiative, successfully identifying innovative solutions and scalable technologies to assist developing countries in tackling the challenges associated with the COVID-19 pandemic. Representatives of the identified winners were offered the opportunity to present their innovative proposals in front of the live audience.

Bernardo Calzadilla-Sarmiento, Managing Director, Directorate of Digitalization, Technology and Agri-business, opened the ceremony and informed the audience that “UNIDO is stepping up its efforts and working with its Member States and other UN agencies to support developing countries to first respond to the crisis, and then recover better, building more equal, sustainable and resilient economies through inclusive and sustainable industrial development”.

The Award Ceremony was moderated by Diana Battaggia, Head of UNIDO Investment and Technology Promotion Office (ITPO) Italy, and the winners per category were introduced by Xiaolei Zhao, Head of UNIDO ITPO Shanghai and Rolf Steltemeier, Head of UNIDO ITPO Germany.



During his closing remarks, Weixi Gong, Chief, Investment and Technology Promotion Division, ITP Network Coordinator, commented that the solutions identified through the Global Call offer an opportunity in view of recovering from the current COVID-19 crisis. “Instead of going back to unsustainable systems and approaches, we need to move towards renewable energy, sustainable food systems, gender equality, stronger social safety nets, and more sustainable consumption and production patterns in an international system that can deliver consistently and universally – with the Sustainable Development Agenda as our guide”.



## WAY FORWARD

UNIDO, through its ITP Network will further support the teams behind the winning proposals in the conclusion of international partnerships. In order to do so, the winners will be provided with advisory and mentorship services through the UNIDO ITPOs.

The winners will further be provided with the opportunity to showcase their innovative proposals during international events, such as the **EuroScience Open Forum 2020 (ESOF2020)**, through the facilitation of an online participation, as well as through participation in the **Expo Dubai 2021**.

Through its network of ITPOs, UNIDO will explore ways of facilitating different types of partnerships at corporate and institutional level to support technology exchange and adoption for the benefit of developing countries, particularly with a view of meeting the challenges posed by the COVID-19 pandemic.



## SOCIAL MEDIA

The UNIDO Global Call was actively promoted on UNIDO's social media channels, with the strong support of UNIDO's Advocacy and Media Relations Division. Overall, some 83 posts were published on Twitter, Instagram and Facebook, as well as further regional



social media channels, such as WeChat. The posts led to more than 180,000 impressions and more than 5,000 engagements. The dedicated sub-webpage for the Global Call on the UNIDO website was visited more than 21,000 times.

The initiative was further promoted through the social media channels of the different UNIDO ITPOs. For example, ITPO Italy's posts on social media led to 30,000 impressions and more than 1,400 engagements.

The above figures show UNIDO's effective outreach in publicizing the UNIDO Global Call for Innovative Ideas and Technologies vs. COVID-19 and beyond, one of the first initiatives conducted jointly by the overall ITP Network.

# THE UNIDO ITP NETWORK

To bridge global investment and technology gaps, UNIDO established its first Investment Promotion Service (IPS) in 1976. The IPS would later evolve into ITPOs. The ITPOs are strategically located in both hemispheres and promote investment and technology flows between investors and technology suppliers in their host countries and potential partners in developing countries.

ITPOs are well positioned to foster synergetic partnerships in line with UNIDO's vision of ISID and advancing the 2030 Agenda for Sustainable Development, in particular SDG 9: Industry, Innovation and Infrastructure and SDG 17: Partnerships.

Currently, the UNIDO ITP Network consists of nine ITPOs.



## Investment & Technology Promotion Offices (ITPOs) Worldwide

### In industrialized countries

Devoted exclusively to promoting investment promotion and technology transfer from host countries to developing countries and economies in transition.

### In developing countries

Along with promoting investment and technology from host countries to other developing countries and economies in transition, these ITPOs also promote inward investment and technology transfer.



© UNIDO 2020. All rights reserved.

This document has been produced without formal United Nations editing.

The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” or “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process.

Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

Photos © UNIDO, iStock, EcoWorth Tech Pte. Ltd., Shanghai Zhizhong Environmental Protection Technology Co. Ltd., ColdHubs Limited, Telespazio S.p.A., doing circular GmbH, The Baobab of Durban, World Manufacturing Foundation, Future Food Institute.



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION

**UNIDO ITP Network Secretariat**

Department of Digitalization, Technology and Innovation  
United Nations Industrial Development Organization

Vienna International Centre,  
P.O. Box 300, 1400 Vienna, Austria  
**[itp-network@unido.org](mailto:itp-network@unido.org)**