

Accelerating Public-Private Partnerships for Sustainable Development Growth

2018 P4G Partnerships Report

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# The SDGs are an inventory of business opportunities.

**Peder Holk Nielsen,** President & CEO, Novozymes

When it comes to solving global goals on sustainability and climate change, no single person, company or country can do it alone. It will take a collaborative approach among the public and private sectors and civil society to deliver on partnerships.

lan de Cruz, Global Director, P4G

These P4G Partnerships support Kenya Vision 2030 Agenda. They represent innovative solutions for green development. We look forward to using the P4G platform to incubate and scale these ideas for Kenya's improvement and as examples for the rest of the world.

Henry Rotich, Cabinet Secretary for the National Treasury, Kenya

Above all else, we're going to need private investment and publicprivate partnerships to deliver on the projects that governments are now making possible. And that's what I think P4G really, uniquely offers as an opportunity.

Mark Watts, Executive Director, C40 Cities

- **02** Introducing P4G
- **06** The Case for Public-Private Partnerships
- **08** Zero Hunger—Food and Agriculture (SDG 2)
- 12 Clean Water and Sanitation (SDG 6)
- 14 Affordable, Clean Energy (SDG7)
- **18** Sustainable Cities and Communities (SDG 11)
- 22 Circular Economy—Responsible Production and Consumption (SDG 12)
- 26 P4G Board and Leadership



A Letter from Ulla Tørnæs, P4G Board Co-Chair and Minister for Development Cooperation, Ministry of Foreign Affairs of Denmark

It is my sincere pleasure to share this report on P4G's important work in accelerating publicprivate partnerships for sustainable growth. We have got off to a fast start as our first call for proposals this year drew 450 applications from nearly 80 countries for funding and/or facilitation.

By gathering leading countries, organizations and businesses for green growth to actively work together, P4G is accelerating public-private partnerships, making P4G the prime place for aspiring and proven partnerships.

The 24 P4G Partnerships described in the following pages show the scope and innovation needed to reach the ambitious targets set forth in the Sustainable Development Goals in the five P4G areas of focus: food and agriculture, water, energy, cities and circular economy. The unique composition of the P4G network and our hands-on approach are ideally positioned to take advantage of these sector imperatives.

While we are proud of this early success and the confidence shown to us by the international green growth community, we recognize our responsibility to keep this powerful momentum to deliver real impact and concrete solutions at scale for a more sustainable future, especially in the developing countries. There really is no alternative.

The P4G Copenhagen Summit is an ideal place to start. We hope all who attend—from businesses, governments and civil society—will actively participate and engage with P4G to support the global movement to advance public-private partnerships to help countries achieve sustainable development and reach the 2030 goals.

This report tells what P4G is and what we do, makes the case for public-private partnerships as a path to sustainability and provides details on the partnerships we are funding and facilitating this year.

I invite you to join us on this journey.

With thanks and warm regards,

Ulla Tørnæs

# INTRODUCING P4G **Public-Private Partnerships to Address the World's Most Urgent Challenges**



- How do we provide adequate food and water to an everincreasing global population?
- How do we bring power to some 1 billion people who lack access to electricity?
- How do we act now to avoid the most damaging impacts of climate change?
- How do we provide clean air, efficient transportation and efficient services to the billions of people who live in large cities?
- How do we transform how we make, use and recycle our products to minimize waste and maximize life-cycle value?





P4G—Partnering for Green Growth and the Global Goals 2030—incubates innovative partnerships working on some of the world's most important challenges. Started in January 2018, P4G aims to be the world's leading forum for developing concrete public-private partnerships at scale to deliver inclusive growth and implement the Sustainable Development Goals (SDGs) and the Paris Agreement on Climate Change. P4G works in collaboration with nine partner countries, four key organizational partners and support from leading organizations in the private sector and civil society to identify and incubate innovative partnerships for sustainable development and growth.

P4G's three core components are:



#### **INNOVATION HUB FOR PARTNERSHIPS**

P4G provides facilitation, funding and recognition to innovative start-up and scale-up partnerships. We incubate the best ideas for sustainable growth in developing countries and emerging markets. We focus on breakthrough solutions in five SDG sectors: food and agriculture, water, energy, cities and circular economy. Our goal is to help these partnerships demonstrate market success and replicability.





### **P4G PARTNERSHIP FACILITATION**

P4G can help partnerships pitch their projects to investors, learn about industry best practices and network with business and government leaders. P4G has helped refine and enhance partnership propositions, found new partners, leveraged P4G's network including getting partner country support and engagement with partnerships and profiled partnerships with investors and funders. We provide P4G Partnerships with valuable visibility and acceleration workshops at global events such as the P4G Copenhagen Summit, the Clean Energy Investment Forum, the World Food Summit and the World Economic Forum, held in Davos. In 2018, P4G selected five partnerships for direct facilitation support.

#### **P4G PARTNERSHIP FUNDING**

Through its financial support, P4G seeks to identify, incubate and accelerate innovative partnerships with promising solutions to achieve sustainable development and growth. P4G holds an annual global competition to select public-private partnerships to receive start-up or scale-up funding. P4G start-up partnerships can receive up to US\$100,000 in funding. P4G scale-up partnerships can receive up to US\$1 million. In 2018, P4G funded 11 start-up partnerships. Another eight partnerships are finalists to receive P4G scale-up funding. The winning partnerships will be announced at the P4G Copenhagen Summit in October 2018.



## What is a P4G Partnership?

P4G partnerships include both private- and public-sector actors who are working together to advance innovative and commercially viable projects in at least one of the five SDG sectors P4G targets. The partners can come from any country, but their work must target sustainable development and growth in one of the 150 developing and emerging countries eligible for P4G projects.

Characteristics of a P4G Partnership

**RELEVANCE:** market-based solutions to one or more of our five SDG sector areas

**IMPACT:** systems change that will advance overall green economic growth with commercially viable and replicable business models

**INNOVATION AND GROWTH:** addresses barriers that must be overcome to accelerate commercially viable means of accomplishing the SDGs

**VALUE ADD:** innovative constellations of private sector, public sector, and organizations tackling global challenges through market-driven approaches

**IMPLEMENTATION:** the capacity to succeed.

### **P4G PARTNERSHIP RECOGNITION**

Partnerships selected as P4G Partnership finalists receive high-profile recognition. We feature our partnerships and their projects with our network partners, business and investor audiences, on news media and social media. They provide a valuable source of experience and know-how on how to implement complex multi-stakeholder partnerships successfully. This knowledge and expertise will be shared systematically with related P4G partnerships. We provide our partnerships with speaking and networking opportunities at P4G and partner events. This visibility can help partnerships accelerate and enhance their own partnerships including through collaboration with other P4G partnerships and partners, gain government support particularly in P4G partner countries and make valuable new connections to support their growth.

### **GLOBAL NETWORK OF DO-ERS**

P4G, with initial funding by the government of Denmark, is a network of leaders from government, business and civil society working to accelerate green global growth. Already we are working in partnership with leaders in nine countries: Chile, Colombia, Denmark, Ethiopia, Kenya, Mexico, Netherlands, South Korea and Vietnam. Our partner countries see public-private partnerships as key to meeting their SDGs. We also benefit from the active support of partner organizations. These include: C40 Cities, Global Green Growth Institute, World Economic Forum and World Resources Institute, which also hosts P4G's Global Hub in Washington, DC.

# SUPPORTING GREEN GROWTH The Case for Public-Private Partnerships



The moment is ripe for businesses around the globe to help drive the shift to a sustainable economy, for their own profit, wider prosperity and the long-term wellbeing of the planet. But no single business, no single government, no single community can by itself accomplish this seemingly herculean task. To succeed, businesses, governments and civil society must work in partnership to achieve the Global Goals for Sustainable Development.

The 17 Sustainable Development Goals (SDGs) chart a transformative course toward a more prosperous, equitable and environmentally and economically sound world. Aligning operations with the SDGs can position businesses ahead of market trends. The Business and Sustainable Development Commission reports in Better Business, Better World that the SDGs hold US\$12 trillion worth of business opportunity, ranging from affordable urban housing to agricultural technology advances.

The latest research from the New Climate Economy finds that climate action and green growth could deliver at least US\$26 trillion in economic benefit through 2030 compared with business-as-usual, including the creation of over 65 million new low-carbon jobs, the avoidance of over 700,000 premature deaths from air pollution and the generation of an estimated US\$2.8 trillion in government revenues through subsidy reform and carbon pricing.

A UN survey shows that half of the business community believes achieving the Global Goals is a government responsibility. While governments have a role to play, neither they nor businesses can go it alone if the SDGs' ambitious targets are to be met.

Public-private partnerships allow governments to attract private-sector engagement, intellectual capital and investments to accelerate deployment of new technologies and innovations such as renewable energy, improvements in food and agriculture. and advancements in water access and management in developing countries. Businesses can benefit when governments share investment risks, ensuring political stability and local market expertise. SDG 17 states it explicitly: "These inclusive partnerships built upon principles and values, a shared vision and shared goals that place people and the planet at the centre, are needed at the global, regional, national and local level."



### **GLOBAL GOALS - SELECTED MARKET OPPORTUNITIES**



**Food and Agriculture SDG 2:** Technology in large-scale and smallholder farms; Sustainable and local food production; Food loss and waste reduction



**Water SDG 6:** Micro-irrigation; Technology and incentives for reducing municipal water leakage; Water and sanitation infrastructure



**Energy SDG 7:** Expansion of renewable energy demand and supply; New models for financing and supplying electricity to underserved regions; Grid interconnection



**Cities SDG 11:** Energy-efficient buildings; Electric buses for cleaner air; Green supply chains and logistics



**Circular Economy SDG 12:** Reducing packaging waste; New plastics economy; Sustainable special economic zones; Circular models for manufacturing and reuse of waste materials

In the following pages, we explore these market opportunities in detail, including details about P4G Partnerships



# **SDG 2 ZERO HUNGER**

SECTOR IMPERATIVES/PROMISING INNOVATIONS

One-third of all food produced for human consumption is lost or wasted along the value chain, costing an estimated US\$940 billion while accounting for about 8 percent of global greenhouse gas emissions and leaving almost a billion people with inadequate diets and insecure food supplies.

Achieving SDG 2 by 2030 will require shifts in how people produce, store and consume food. The rewards to meeting this challenge are powerful: cutting current food loss and waste by just one-quarter would be enough to feed 870 million people annually. Reducing food waste in the pre-consumer value chain could be worth US\$155 billion a year by 2030, and reducing consumer food waste would be worth a further US\$175 billion.

The key challenge to reducing food loss in developing countries is the lack of sufficient handling and storage, compounded by a lack of training and availability of investment to build skills and infrastructure. At the same time, trends towards diets high in processed foods, refined sugars, refined fats, oils and meats have resulted in more than 2.1 billion people becoming overweight or obese. Tackling the double burden of obesity and malnutrition could save trillions of U.S. dollars annually.

Starting with production, climate-smart agricultural methods such as crop diversification, agroforestry and soil and water conservation have been shown to increase yields, bringing significant economic growth and jobs to farming communities while avoiding the environmental impacts of more traditional methods.

A review of nearly 1,200 businesses across 700 companies and 17 countries found that 99 percent earned a positive return on investment in activities to reduce food loss and waste, with a median benefit-cost ratio of 14:1.



#### **Sustainable Food Platform**

#### START UP

The Sustainable Food Platform is led by DanChurchAid, along with Arla Foods Ingredients and GAIN Nordic partners. The partnership aims to rethink market-based solutions to promote food security for poor and vulnerable people living in refugee camps and local host communities. The partnership will tap into existing knowledge and bring together local producers with global partners in an "innovation platform," which will develop and test low-tech and energy-efficient food solutions (e.g. nutritious and affordable products like biscuits and porridge) to promote nutrition and sustainable livelihoods for the poor. The country focus will be in Ethiopia, with links to Uganda and Kenya, where more than 2 million refugees live today. This partnership builds on the GAIN Nordic partnership activities in Ethiopia.

# Reducing Deforestation by Expanding Demand for Sustainable Palm Oil and Soy

Led by IDH, this partnership will develop a platform for harvesting sustainable palm oil and soy in India and China—two of the largest markets for these products. To reduce deforestation and land degradation in Latin-America (Brazil, Argentina, Paraguay, Colombia), South-East Asia (Indonesia, Malaysia) and other countries producing palm oil and soy, India and China's imports need to transition towards sustainable sourcing. P4G is supporting this partnership to help bring together government, industry and environmental leaders in these countries to adopt benchmarks for sustainably harvesting these products.





### Indonesia Food Loss and Waste Action Partnership

START UP

The Food Loss and Waste Action Partnership, led by the Food and Land Use Coalition, will build a cross-sector program to reduce food loss and waste in Indonesia by 50 percent by 2030. Indonesia is the fourth most populated country in the world with 11 percent of the population still living below the national poverty line. The Food and Agriculture Organization of the United Nations estimates that one-third of all food produced annually for human consumption in the world is lost or wasted. In Indonesia, a country of 260 million people, the equivalent of 300 kilograms (660 pounds) per person is wasted, largely before fruits, vegetables, and grains reach consumers. The agricultural sector represents about a third of total employment in Indonesia. More than 90 percent of farming is by small family farmers who would be the primary beneficiaries of food loss saving. The Coalition will use the P4G funding to bring together government ministries, private sector and civil society partners to develop a plan of action to reduce food loss and waste in Indonesia leveraging success with similar approaches in the Netherlands, the UK and the US. The Coalition will support partner companies with strategies and practices to implement better storage technologies, improve shipping and distribution and train staff to help them meet

their food loss and waste targets. Supported by a unique combination of partners, including the World Business Council for Sustainable Development, the World Resources Institute and the New Climate Economy, the Coalition expects to involve global agri-food companies with operations in Indonesia to join Olam, the leading member of WBCSD's working group on food loss and waste in the coalition, such as, Yara, Rabobank and Syngenta.

## Towards Large-Scale Digital Decision Support Systems for Farmers

#### START UP

Towards Large-Scale Digital Decision Support Systems for Farmers combines Big Data with food security to better inform real-time decision making for rural farmers in Africa. Focused in Malawi, this partnership through the CGIAR Platform for Big Data in Agriculture, Digital Impact Alliance, and Viamo will allow Malawian farmers to access information related to site-specific use of fertilizer. This data platform will be accessible to farmers via voice response and SMS. Consequently, farmers will be able to make decisions on-the-spot and in-the-moment, thus increasing efficiency and supporting productive harvests. With P4G's help, the Big Data platform will invest in streamlining and developing IT architecture that can support many thousands of users in Malawi to enable timely, site-specific advice on a national scale.







## Food Delivery Companies for Reducing Single-Use Plastics – Start Up

START UP

Forum for the Future—a global sustainability non-profit, and foodpanda-leading mobile food delivery service, are embarking on a joint partnership to eliminate singleuse plastic waste from the food delivery ecosystem in Asia. Working together with a number of food and beverage companies, the partnership aims to develop a shared protocol for reducing the use of single-use plastics, which food delivery companies and their food and beverage partners can easily adopt within their operations. In designing the plastic waste reduction protocol, Forum for the Future will bring its rich experience in catalysing system-wide transformational change and developing systemic plastic reduction strategies with partners in various industries worldwide-including the influential #OneLess movement to reduce the use of single-use plastic water bottles in the city of London. The protocol will be tested in two South-East Asia markets to help ensure that it is designed for easy adoption across all food delivery platforms.

### The sub-Saharan Africa Innovation Lab for Climate Finance (the Africa Lab)

### SCALE UP

The Global Innovation Lab for Climate Finance (the Lab) aims to drive billions of dollars of private investment to the low-carbon, climate resilient economy in developing countries by identifying, developing, and supporting transformative sustainable finance ideas. A public-private partnership that includes over 60 institutions, the Lab brings together and catalyzes broader government and private sector efforts to scale up finance to mitigate climate change and enable climate adaptation in developing countries – in four years, Lab instruments have mobilized over USD \$1.28 billion in sustainable investment.

With support from the P4G network, the Lab aims to launch a sub-Saharan Africa Innovation Lab for Climate Finance (the Africa Lab), drawing upon the Lab's established process, expertise, and investor base, while partnering with local experts and investors, as well as key regional host institutions for the Africa Lab, including the Development Bank of Southern Africa (DBSA), FONERWA, and the International Fund for Agricultural Development (IFAD), to crowdsource, develop and launch transformative financial solutions that address key barriers to sustainable investment in sub-Saharan Africa.

(Note: This partnership addresses multiple SDGs, including SDG 13 on climate action.)



# **SDG 6 CLEAN WATER AND SANITATION** SECTOR IMPERATIVES/PROMISING INNOVATIONS

# More than 2 billion people lack readily available and safe water supplies at home, while 4.5 billion live without safely managed sanitation.

These numbers indicate enormous challenges but also opportunities to use water smarter though improved technology from drip irrigation to remote sensors to more water-efficient crops—planning, use of water prices with targeted support to the poor, or by investing in public infrastructure.

Poorly managed and underpriced water often results in overuse and losses that are not addressed. Addressing the water-energyfood nexus will be critical particularly in increasingly water-stressed regions, notably in the developing world.

Sound water allocation policies could increase GDP in some regions by as much as 6 percent by mid-century, even factoring in a changing climate and growing world population.

Water resources management and infrastructure investment needs are

estimated to be as much as US\$1.5 trillion per year by 2030. The return on investment is great: US\$5 for every dollar invested in sanitation, and US\$2 for every dollar invested in safe water supply.

In basins where hydropower plays a significant role, even a 5 percent improvement in other water services such as irrigation, drinking water supply and flood protection could generate an additional US\$38 billion per year in additional benefits.

There is uncaptured value in the form of climate-related opportunities to reduce costs by improving efficiency and recovering value in the water and sanitation space.

Improving water infrastructure will require making money available to deliver reliable services that secure revenue while delivering to all segments of society.



#### **Business-Humanitarian Partnership**

#### START UP

Developed by the Danish Refugee Council (DRC) and Grundfos, this partnership will develop a business model to provide sustainable water solutions to refugee settlements and surrounding hosting communities in Uganda. The multi-year model will focus on proliferating solar-driven water systems linked to better water access and safe water management, thus reducing the need for relatively expensive and unsustainable trucking of water to refugee communities.

# Partnership for Blended Finance on Water

Partnership for Blended Finance on Water is led by ASSIST, along with Grundfos. The partnership focuses on Vietnam's drinking water infrastructure by developing blended finance models for greater investment in the sector. The investment will support technologies and practices that reduce the percent of non-revenue generating water from 22 percent to a goal of 15 percent by 2025, which also reduces energy consumption. The partnership involves the Vietnamese Water Supply and Sewerage Association, ASSIST, an international sustainable development organization focused on Asia, the Danish company Grundfos and IFU, the Danish Investment Fund for Developing Countries.



# **SDG 7 AFFORDABLE AND CLEAN ENERGY**

SECTOR IMPERATIVES/PROMISING INNOVATIONS

Most of the 1 billion people without access to energy and the more than 2.7 billion without access to clean cooking are in developing economies, but even in developed economies, an estimated 200 million people suffer from energy poverty.

Because of plummeting costs for solar and wind power—down by 85 percent and 65 percent between 2009 and 2015, respectively the deployment of renewable energy is rapidly accelerating, adding more renewable capacity annually than from all fossil fuels combined.

More will be needed. An estimated US\$8.8 trillion in additional investment in energyefficient equipment and infrastructure across buildings, transport and industry is required by 2030. Improving energy efficiency of lighting and appliances can slash electricity costs; simply switching to LED lighting can offer savings of as much as 70 percent, with more savings possible when coupled with smart systems.

Meeting growing power demand with lowcarbon energy has the potential to dramatically transform the health of people and the planet. Doubling renewable energy in the global energy mix by 2030 could save up to 4 million lives. The renewable power sector is also a major job creator. In 2016, renewable energy companies employed 9.8 million people worldwide.

The economic savings of cleaner energy are clear. Within the G20, countries that are currently net importers of fossil fuels would save US\$1.95 trillion per year in energy import bills by 2050.

Despite policies to deliver clean energy to millions, population growth could still leave 674 million people without electricity access by 2030. Nearly 90 percent of those expected to be without electricity in 2030 are in rural sub-Saharan Africa.

Expanding electricity access through renewable energy and scaling up clean cooking drives productivity and growth, reduces poverty and pollution, and improves health and quality of life, with the largest benefits for women. The employment potential of decentralized clean energy is also significant. Universal access to clean cooking alone could avoid 1.8 million premature deaths per year in 2030.



#### **Global Distributors Collective**

#### START UP

Hosted by Practical Action with implementing partners BoP Innovation Centre and Hystra, this partnership supports businesses which distribute products such as solar lights, water filters, clean cookstoves and nutrition products to underserved households. It helps distributors improve business performance, by providing services that help them save time, reduce costs, build capacity and develop catalytic business partnerships. The Global Distributors Collective (GDC) also provides a collective voice for the last mile distribution sector by generating and sharing learning, raising the profile of distributors, and helping the broader ecosystem to work effectively with distributors to achieve shared impact goals.

# Global Partnership for Energy Efficient Data Centres

FACILITATED

The Global Partnership for Energy Efficient Data Centres is led by the Copenhagen Centre on Energy Efficiency and serves as a global platform to foster transformational collaboration among various public and private stakeholders in the global data centre industry. This Partnership is founded on the basis that exponential increase in the amount of data demand and production is driving the request for more digital processing and storage space, which has contributed to unprecedented growth in the global data centre construction market over the last few years. The amount of energy currently consumed by the world's data centres is estimated at 3 percent of the global electricity supply and accounts for about 2 percent of global greenhouse gas emissions with a growth rate of 7 percent yearon-year through 2020.







# Integrated Decentralised Electrification in Africa (IDEA) Partnership

#### SCALE UP

Integrated Decentralized Electrification in Africa (IDEA) Partnership, driven by SNV-Netherlands Development Organisation and Standard Microgrid will target rural electrification in developing countries by supporting the market's most overlooked resource: its users. IDEA acknowledges that while affordable solutions for entry-level energy access do exist, rural workers - mostly farmers-still have a limited ability to pay. IDEA will focus on the intersection of agriculture and business in Zambia, where less than 5 percent of the rural population has access to electricity. Through the institution of solar mini-grids and stand-alone systems, IDEA aims to generate electricity close to where it is needed, making mini-grids the standard choice for a rural population who would otherwise have to wait several years, or even decades, for electricity connection. This increased access to electricity will be combined with a program that allows farmers to make investments in equipment for pumping, milling, chilling and drying, therefore combining the use of relevant technologies to increase agricultural productivity and improve local economic viability. The access to electricity will have a positive economic impact as more people increase productivity, leading to greater household income which will then increase energy demand, creating a sustainable energy market.

# Clean Energy Investment Accelerator

Most Fortune 100 companies have renewable energy procurement goals, but for multinational corporations with supply chains that crisscross the world, successful pursuit of clean energy deployment is a serious challenge. The Clean Energy Investment Accelerator (CEIA), through the leadership of the U.S. National Renewable Energy Laboratory, World Resources Institute, and Allotrope Partners, will focus on three pillars for mobilizing clean energy investment at scale: purchasers, pipeline and policies. The partnership will support power purchasers to procure from clean energy providers, improve project economics to grow the clean energy project pipeline, and engage with the public sector to strengthen policies to increase clean energy investment. Through these three avenues and country-specific engagement in Colombia and Vietnam, the CEIA will help companies meet their clean energy targets, therefore underpinning progress towards national and multinational sustainable development goals.







### Africa GreenCo



Across the 15 countries that make up the South Africa Development Community, less than a guarter of the population have access to electricity, while in rural areas that number goes down to 5 percent. Africa GreenCo is a public-private-partnership between African governments, the private sector and international financial institutions to create a dynamic new participant in the Southern African Power Pool (SAPP). Africa GreenCo will be a regional creditworthy intermediary offtaker and power services provider, reducing the credit risk and therefore cost of renewable energy generation projects. Its initial focus will be on supporting projects in Zambia prior to expanding into other SAPP member countries. Africa GreenCo's transformative role is to mobilise significant private sector finance for the sector, to increase the liquidity of and reliance on the SAPP markets for risk mitigation and begin to diversify away from the current model of African governments taking on heavy contingent liabilities to secure individual energy projects. Ultimately, improving energy access will enhance education, health care, and stimulate economic development in a part of the world with the highest concentrations of people living in poverty.

## Green FIDC

#### FACILITATED

This partnership will increase green investment in Brazil through the Green FIDC—a structured finance instrument that reduces the cost of capital and facilitates long-term financing for renewable energy and energy efficiency projects. The partnership has an indicative pipeline of US\$1bn in projects and is seeking funding support to develop this pipeline and disseminate lessons to promote replication. A pilot for Órigo Energia (a leading Brazilian solar company backed by TPG ART) is already underway, designed to finance up to 20,000 residential solar rooftops. When in place, it will reduce solar costs by 10-15 percent below retail electricity prices. The partnership is currently fundraising with facilitation support by P4G.

### **Energise Africa**

#### START UP

Energise Africa is the product of the joint efforts of Ethex and Lendahand, two of Europe's leading online impact investing platforms. The partnership aims to demonstrate how UK-based retail impact investors can provide affordable finance for pioneering solar businesses operating in Africa to accelerate universal access to affordable, reliable, sustainable and modern energy for all. Energise Africa makes it possible to start investing with just £50 in solar businesses installing systems in rural, Sub-Saharan African homes—allowing "pay-as-you-go" flexibility to low income households across Africa, bringing clean energy alternatives to families otherwise dependent on kerosene or diesel.



# **SDG 7 SUSTAINABLE CITIES AND COMMUNITIES**

SECTOR IMPERATIVES/PROMISING INNOVATIONS

Better urban planning, strategic infrastructure investment and the expansion of public and active transport networks can combat congestion and air pollution to deliver more livable cities, improving access to jobs and housing, and offering up to US\$17 trillion in economic savings by mid-century, the New Climate Economy found.

Improved urban housing can increase economic security, especially for lower income groups, while boosting productivity of home-based workers, who account for a significant share of the city workforce—as much as 14 percent in India and 6 percent in South Africa—many of whom are women.

There are significant opportunities to steer planned investment in shelter, work buildings, infrastructure and services towards low-carbon options. These include recycling and composting, distributed renewable energy generation, net-zero buildings, and smart transportation.

Because transportation accounts for 23 percent of carbon dioxide emissions, according to the International Energy

Agency, and is the fastest-growing source of greenhouse gas emissions, low-emission vehicles are vital to addressing climate change and improving the quality of urban life. Many cities are exploring transitioning to electric buses, notably in China where there are more than 350,000 electric buses, according to Bloomberg New Energy Finance.

As the C40 Cities urban network reports, each electric vehicle that displaces a conventional car saves approximately 1.5 tons of carbon dioxide per year, representing a 62 percent reduction compared to a petrolpowered car and a 53 percent reduction compared to a diesel-powered car.



### Emerging Cities Project supported by the Building Efficiency Accelerator

SCALE UP

A third of the world's energy goes to light, heat, and cool buildings. Our hope of achieving the carbon emission targets in the Paris Agreement rests on reducing this consumption as soon as possible. Working through an international network that includes Green Building Councils, city governments, businesses, and NGOs, the World Green Building Council, through its partnership in the Building Efficiency Accelerator seeks to bring about transformational change in building practices. Support from P4G will enable Regional scale up of this work across the Americas, particularly Colombia and Mexico but also Argentina, Chile, Brasil, Guatemala, Costa Rica, El Salvador, Peru and Panama. This ambitious project is designed to provide cities with the tools they need to develop and implement energy-efficient building policies and programs to scale energy savings.

## The Zero Emission Bus Rapid-deployment Accelerator (ZEBRA)

#### SCALE UP

The Zero Emission Bus Rapid-deployment Accelerator (ZEBRA) will work with Mexico City and São Paulo—two megacities each with more than 20 million residents, and Medellín, Colombia to increase their deployment of electric buses. Replacing diesel buses with electric buses leads to cleaner air and a reduction in carbon emissions that contribute to global warming. Led by C40 Cities and the International Council on Clean Transportation, ZEBRA expects to secure a public commitment from regional finance institutions to invest 1 billion USD in zero emission electric drive technology in Latin America by 2021 and to research financing and business model options for bus operations. In addition, ZEBRA will







gain commitments from major bus and engine manufacturers to support the growth of electric buses in Latin America through collaboration with cities on vehicle specifications, charging strategies, pilot projects, financing and other steps necessary for fleet-wide deployment of zero emission buses. In the first phase of the project, ZEBRA will establish working groups in each of the three cities to include representatives from public and private sectors to build an action plan for procuring electric buses. ZEBRA will incorporate learnings from electric bus deployment in Santiago, Chile, to guide the work planned for Mexico City, São Paulo, and Medellín as well as other Latin American cities. Currently, less than 1 percent of municipal buses in Latin America are electric.

## Global Smart Green Logistics Innovation Partnership

#### SCALE UP

China's Alibaba is estimated to be the world's largest e-commerce company in terms of market share. Its Cainiao Network handles express delivery with its logistics partners for about 28 billion of these packages sent annually to locations in China. The growth of e-commerce in China has created a need to both reduce and recycle more of the plastic and cardboard used to pack and transport products. A new effort by the Global Smart Green Logistics Innovation Partnership aims to expand a successful green logistics pilot program in Xiamen to many other



Chinese cities by 2020. The Partnership is led by the China Environmental Protection Foundation, Cainiao Network and the Xiamen Municipal Government Transportation. In Xiamen, a port city of 3.5 million people, Cainiao has set up more than 100 green campus and lastmile community dispatch stations. Cainiao provides an advanced technology platform to power the green logistics management systems. This platform provides realtime analytics and monitoring of pick-up and dispatch of packages. Packaging waste materials are gathered, sorted and processed for treatment and recycling. More and more electric vehicles are used

for the local delivery, helping to reduce air pollution. Since the pilot's launch in 2017, more than one million delivery boxes have been recycled for reuse. Additionally, a green packaging service is now covering all the express delivery networks in the city. The Partnership will lead efforts to expand the Xiamen pilot to other Chinese cities such as Beijing and Shanghai. This includes feasibility studies, policy engagement, a peer-to-peer learning network, and training and certification. The Partnership also will establish and open platform to promote green logistics innovation and adoption worldwide.



# **CIRCULAR ECONOMY** SECTOR IMPERATIVES/PROMISING INNOVATIONS

From 1970 to 2010, annual global extraction of materials more than tripled from 22 billion tonnes to 70 billion tonnes, and much of what is extracted and produced is destined for a single use and then discarded, according to a UNEP report.

Policies that encourage more efficient use of materials—especially metals, petrochemicals and construction materials—could enhance global economic activity, as well as reducing waste and pollution. Shifting to a circular industrial economy could de-couple economic growth from material use.

This will require harnessing the full power of innovation and private-sector investment and participation. If all Fortune 500 companies commit to science-based targets to reduce carbon dioxide emissions in their operations as more than 400 companies have already done under the WRI-led Science Based Targets initiative—a key part of that strategy would be a transition to climate-positive products that would engage consumers. If only the top 10 global retail companies did this, it could begin a daily shift of almost US\$4 billion toward the low-carbon economy, Deloitte reported. Because plastics are a preferred choice in designing, developing and packaging consumer products, demand for plastic is growing, especially in emerging economies. Today, 95 percent of plastic packaging value—or US\$80--120 billion annually—is lost after first use, a World Economic Forum report found. Globally, the plastic recycling market is projected to grow at 6.5 percent annually from 2017 to 2023, reaching a market size of almost US\$54 billion by 2023, with a significant boost for jobs.

Single-use product consumption is reaching its limits and a circular economy that maximizes materials and minimizes waste presents a trillion-dollar opportunity, according to the World Economic Forum report Towards the Circular Economy: "The quest for a substantial improvement in resource performance across the economy has led businesses to explore ways to reuse products or their components and restore more of their precious material, energy and labour inputs."



### Circular Economy Retrofitting of Chinese Industrial Parks (CERCIP)

#### START UP

Circular Economy Retrofitting of Chinese Industrial Parks: In 2017, industry accounted for more than 40 percent of China's GDP\*. Chinese industrial parks-vast expanses of land set aside to house the factories and systems that keep manufacturing at paceare large enough that cities are growing around them. While a cornerstone for China's leading economy, this explosion of industry has incurred negative environmental effects including major contributions to world greenhouse gas emissions, resource depletion and environmental pollution. This partnership between the Chinese Association of Circular Economy, Carbon Trust, Anhui Lu'an Yeji Economic Development Zone Administrative Committee and the Overseas

Development Institute, aims to solve this problem by introducing new models and best practices in China's expansive industrial parks to better align with the country's ambition to become a more "ecological civilization". The partnership will use circular economy principles-reduce, reuse and recycle-to re-focus industrial processes and lessen the environmental impact of industrial parks. Through alliance-building between national and local governments, businesses and park administration committees, the partnership will gain support for both increased investment in sustainable manufacturing as well as better technical supporting tools for implementation. Initially focusing on a demonstration project at the Yeji Industrial Park, located in Anhui Province neighboring Shanghai, the partnership will work to develop a model for more sustainable industrial park practices to be scaled across China and eventually on the global stage.







START UP

On a weekly basis, Kenya produces 1.3 million kilograms of plastic waste. Only 10 percent of this waste is collected for re-use. Developed by the Kenya Private Sector Alliance (KEPSA) with support from the Kenya PET Recycling Company (PETCO), Retail Traders Association of Kenya (RETRAK), BESIC Group Ltd, Discovery Brands, Ital 3D solutions, County Government of Kiambu, Kenya Climate Change Innovation Center (KCIC), the Center for Clean Air Policy (CCAP), and The Danish Environmental Protection Agency (EPA), this partnership aims to curtail the country's overall plastic waste by first improving how much waste is collected, and then transforming waste materials into recycled products for commercial use. In order accomplish systemic change in plastic collection, the partnership will first work with plastic producers to better label and trace plastic bottles, and then work with manufacturers to increase uptake in recycled plastic materials. Consequently, the partnership will spur innovation and research in plastic waste reuse, thus demonstrating the economic viability of plastic recycling.

#### **Vietnam Materials Marketplace**

#### START UP

Vietnam Materials Marketplace is a cloud-based materials trading system that directs Vietnam's booming manufacturing industries towards the circular economy. Vietnam is one of the fastest growing countries in Asia, hosting a thriving manufacturing economy and serving as a hub for much of the world's material flows. But the amount of materials deposited in Vietnam's landfills is a significant health and environmental challenge. In fact, material production and use drive the largest amount of greenhouse gas emissions globally. The Pathway21 Materials Marketplace takes this challenge head onhelping manufacturers reduce both waste disposal and excessive production through an online, cloudbased marketplace where manufacturers can buy, sell or trade materials and equipment suitable for further or alternative use. This model will move industrial waste up the value chain into its highest and best use, reducing environmental impact and using circular economy principles to grow Vietnam's economy in a sustainable and resilient way. Through support from The Vietnam Chamber of Commerce and Industry (VCCI) and the United States Business Council for Sustainable Development, the Materials Marketplace will use successful, proven models from other industry hubs around the world to increase efficiencies, reduce costs, and enhance quality of life in Vietnam.

#### SSEZ Africa

#### SCALE UP

A special economic zone (SEZ) is a geographic region whose economic laws differ from those typical within the rest of the zone's country. These discrepancies, which most often manifest in rules and laws related to lower tariffs, duties and the like, are put in place to level the economic playing field and increase foreign investments. However, while SEZs deliver economic growth and create jobs, their environmental footprint







is typically disregarded, and labor conditions and community impact are often criticized. The Made in Africa Initiative and LADOL, with the support of SYSTEMIQ, is evolving the concept of SEZs by moving beyond "do no harm" environmental stewardship to proactively developing zones to drive attainment of the SDGs through promoting businesses and processes that create positive social and or environmental outcomes. Through the institution of sustainable special economic zones, this partnership will focus on promoting human rights, social benefits and curbing the environmental impact of industrial production, while aiming to extend economic growth and job creation beyond the enclave of the zone. Building upon previous success in Nigeria, this partnership will scale in Ethiopia and Kenya, with special focus on sustainable energy and the reuse of water and waste.

### Race to the Top

#### FACILITATED

This partnership creates a platform to develop and scale inclusive business models in and around the Hawassa Industrial Park in Ethiopia, supporting it with international best practices and lessons learned from the Race to the Top-Vietnam program. The partnership will serve as a platform where global and local companies, public sector, civil society and other partners come together to catalyze sustainable and inclusive growth. The platform has the aim to pilot and catalyze scalable sustainability projects in and around the Hawassa Industrial Park, as well as facilitate the exchange of best practices between industrial parks.

# China Sustainable Procurement Network

The Sustainable Procurement Network (SPN) is a partnership led by China Environmental United Certification Center (CEC), a non-forprofit organization facilitating the development of "green consumption" and "green supply chain". China hosts the world largest supply chain when manufacturing of product is concerned. Lax environmental regulations and enforcement over decades have compromised the country's environmental security, threatened public health, increased costs of growth, not only environmentally but economically and socially. To address these issues, the Chinese government issued the Guide of Enterprise Green Procurement and published the Code for Retailer Procurement in Sept 2017. CEC and its partners jointly launched the Alliance of Green Consumption and Green Supply Chain (GCSG) to help companies manage their own performance or their suppliers' sustainability and green performance. This partnership platform has 109 key partners from government agencies, universities, companies (Chinese and international), and NGOs. GCSG is working with JD.com, China's largest e-commerce platform by revenue, to reduce its carbon footprint, energy consumption, packaging consumables and implement its green supply chain.

# P4G EXPERTS P4G Board Members

![](_page_27_Picture_1.jpeg)

ULLA TØRNÆS P4G Board Co-Chair, Minister for Development Cooperation, Ministry of Foreign Affairs of Denmark

![](_page_27_Picture_3.jpeg)

**BØRGE BRENDE** President, World Economic Forum, Switzerland

![](_page_27_Picture_5.jpeg)

**GEMEDO DALLE TUSSIE** Minister of Environment, Forest and Climate Change of the Federal Democratic Republic of Ethiopia

![](_page_27_Picture_7.jpeg)

**SIGRID KAAG** Minister for Foreign Trade and Development Cooperation, The Netherlands

![](_page_27_Picture_9.jpeg)

**DONG KWAN KIM** Chief Commercial Officer, Hanwha Q CELLS, South Korea

![](_page_27_Picture_11.jpeg)

**FRANK RIJSBERMAN** Director General, Global Green Growth Institute, South Korea

![](_page_27_Picture_13.jpeg)

PEDER HOLK NIELSEN President and CEO, Novozymes, Denmark

![](_page_27_Picture_15.jpeg)

**HENRY K. ROTICH** EGH, Cabinet Secretary for the National Treasury and Planning in Kenya

![](_page_27_Picture_17.jpeg)

NGUYEN THE PHUONG Vice Minister of Planning & Investment, Vietnam

![](_page_27_Picture_19.jpeg)

ANDREW STEER President and CEO, World Resources Institute, United States

![](_page_27_Picture_21.jpeg)

RAFAEL PACCHIANO ALAMÁN Minister of Environment and Natural Resources,

![](_page_27_Picture_23.jpeg)

Mexico

**MARK WATTS** Executive Director, C40 Cities, United Kingdom

![](_page_27_Picture_25.jpeg)

**YOO YEON CHUL** Ambassador for Climate Change, Ministry of Foreign Affairs, South Korea

# P4G TEAM P4G Leadership Team

![](_page_28_Picture_1.jpeg)

IAN DE CRUZ P4G Global Director

![](_page_28_Picture_3.jpeg)

**LEILA YIM SURRATT** Head of Strategy and Engagement

![](_page_28_Picture_5.jpeg)

HANS ALARCON Operations Manager

![](_page_28_Picture_7.jpeg)

**ROBYN MCGUCKIN** Head of Partnerships

![](_page_28_Picture_9.jpeg)

**FRANK WALTER** Head of Communications

# **P4G Partner Countries National Platforms**

![](_page_29_Picture_1.jpeg)

CHILE: Ministry of Social Development; Agency of Sustainability and Climate Change

**DENMARK:** Ministry

Green

of Foreign Affairs; State of

![](_page_29_Picture_3.jpeg)

ETHIOPIA: Ministry of Environment, Forest and Climate Change

KENYA: National Treasury

and Planning; Kenya Private

Sector Alliance

![](_page_29_Picture_5.jpeg)

**THE NETHERLANDS:** Ministry of Foreign Affairs

![](_page_29_Picture_7.jpeg)

SOUTH KOREA: Ministry of Foreign Affairs

![](_page_29_Picture_9.jpeg)

VIETNAM: Ministry of Planning and Investment; Vietnam Chamber of Commerce and Industry

# Organizational **Partners**

HOSTED BY

![](_page_29_Picture_13.jpeg)

WORLD RESOURCES INSTITUTE

![](_page_29_Picture_15.jpeg)

![](_page_29_Picture_16.jpeg)

![](_page_29_Picture_17.jpeg)

**COLOMBIA:** Ministry of Foreign Affairs

![](_page_29_Picture_19.jpeg)

MEXICO: Ministry of Environment and Natural Resources

**28** | P4G: ACCELERATING PARTNERSHIPS

# Please visit **p4gpartnerships.org** for the latest news and updates about P4G's partnerships.

Credits: Writer/Editor: Deborah Zabarenko/Frank Walter/Kate Danielsen

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### About the P4G logo

Drawn from natural forms such as the curl of a fern, a chameleon's coiled tail and a chambered nautilus shell, the swirled shape also references the so-called golden spiral based on the mathematical Fibonacci sequence. Its palette harmonizes with the colors of the 17 Sustainable Development Goals, and viewed upside down, the 4 in P4G can be seen as 17, another reference to the SDGs. It was designed by Datagraf Communications.

## **Contact Us!**

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