

BBBW PHL

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Executive Summary

The Philippines is rising. It has been touted as the next Asian growth miracle and projected to become a US\$1 trillion economy by 2030. Propelled by strong consumer demand from a growing consumer class, improved productivity and output from the non-agricultural economy, steady streams of remittances and an increasingly tech-savvy, globally competitive workforce, the Philippines has sustained almost 7% annual economic growth since 2010. The World Economic Forum estimates that the burgeoning middle class in the Philippines is set to exceed the spending power of Italy's middle class by 2030.

This enthusiasm is contagious. Attracted by the large domestic market, young English-speaking workforce, and Philippines' prime location in the region, Foreign Direct Investment has grown rapidly over the past few years, rising from \$4.5 billion in 2015, to \$7 billion in 2016 and an all-time high of \$9.5 billion in 2017 – almost three-quarters of which has been concentrated in manufacturing and real estate. To illustrate the point, last year, Ikea publicly confirmed that it will invest 7 billion pesos (\$133 million) to build the world's largest (and the Philippines' first) Ikea store in Manila.

But the growth model that has driven the Philippines' success thus far is reaching its limits; distinctive social and environmental challenges remain, which puts the country's future economic growth, stability, and shared prosperity at risk. Philippines' sustained economic growth has not been comprehensive, and workers have not benefitted from the country's productivity growth. Real wages have stagnated. Of the 94 million people living in the Philippines, almost one third live in poverty and 44% live in densely populated slum areas across the country – a figure growing by 3.5% annually. Though the Philippines is a regional leader in gender equality, gender outcomes remain unbalanced and a huge economic opportunity remains untapped. There is a need to advance inclusive growth, reduce inequalities, and strengthen the social fabric.

On the environmental front, the country is facing acute climate risks which require more investment in resilience and environmental protection. Of the 10 world cities most exposed to natural hazards, 8 are in the Philippines. Between 2006 and 2013, the Philippines experienced 75 natural disasters, mostly typhoons, tropical storms and floods that cost US\$3.8 billion in damages and losses, exacerbated by poor planning and adaptation infrastructure. Moreover, energy issues remain. The Philippines' ongoing reliance on fossil-based power, which powered early rapid growth, is at odds with both the economic and environmental imperative for an energy transition, and still results in the most expensive household energy in the region. Additionally, the country faces major water and sanitation challenges. Adaptation and resilience are indispensable components of the country's ongoing growth story.

This report offers a compelling alternative; a new model of growth that can leapfrog these structural challenges and ensure that the Philippines' robust growth continues whilst improving social and environmental outcomes. This new model entails pursuing business strategies and transforming markets in line with the 17 UN Sustainable Development Goals, reframing the country's environmental and social threats as growth and development opportunities.

The Philippines' large urban population and remarkable natural resources position the region exceptionally well to develop a low-carbon, more socially inclusive economy aligned with the Global Goals. Taking this route opens up attractive investment opportunities in 60 sustainable market 'hotspots'. Together, these markets could yield an economic prize worth more than US\$82 billion across the country by 2030, not to mention large environmental and social benefits, notably in employment. These hotspots could create more than 4.4 million new jobs, spreading prosperity in rural and urban populations.

Major market opportunities

This report details the most significant business opportunities aligned with the Global Goals in four key areas of the Philippine economy: cities; energy and materials; food and agriculture; and health and well-being. Forward-looking firms are already developing innovative solutions in all four areas.

Cities (US\$24 billion, 2.1 million jobs): With more than 45 percent of its population living in cities, the Philippines is a highly urbanised country. Manila is the world's most densely populated city, with 12.8 million inhabitants residing in Metro Manila alone, and over 23 million in its broader surrounding area, a figure expected to rise to 30 million in 2030. This rapid urbanisation has created some new jobs, educational opportunities, and better living conditions for some but has also brought some serious challenges; a deficit of affordable, secure housing, soaring energy demand, crippling pollution and traffic gridlock. Business opportunities with the greatest urban economic, environmental, and social impact lie in affordable housing, green public transport systems, and disaster management systems to weather oversized climate risks.

Food and agriculture (US\$23 billion, 1 million jobs): Food and land use systems are vital to the Philippines' growth, self-sufficiency and environmental health. Although agriculture as a share of Philippines' GDP has fallen from over 30 percent in the 1970s to 8.5 percent in 2018, the sector is still of great importance to the Philippines, providing jobs for almost 11 million people (26 percent of the work force). However, current levels of agricultural infrastructure are a significant block to productivity and sectoral growth. At present, approximately 40 percent of food is lost in production, post-harvest and processing – of which half is attributed to infrastructure constraints. Investment in new technology, such as cold storage systems, can reduce this food waste, increasing farmer incomes and supporting the 14.2 million under-nourished people in the Philippines. Equally, the country's once abundant biodiversity and forests are being threatened. The Philippines is losing approximately 47,000 hectares of forest cover annually and is down to 24 percent of its original forest cover of the 1900s, significantly less than the 54 percent cover needed to protect against landslides and ensure water supply from the watersheds. New models of forest protection and forest ecosystem services can restore land whilst creating new income streams for local communities. Upgrading technology in large scale farms, developing sustainable aquaculture models, guaranteeing food safety and scaling energy smart agriculture offer further attractive possibilities.

Energy and materials (US\$19 billion, 0.7m jobs): The Philippines has some of the most expensive energy prices in the region and is heavily reliant on fossil fuels. As demand for energy in the Philippines is forecast to increase by 250% by 2040, and with a large share of population still without access to electricity (~10 percent of the population), there is an imperative and a sizeable opportunity in both improving energy efficiency and expanding energy access. These

trends also open up opportunities to scale ‘circular’ business models in the automotive, appliance, electronics, and plastic packaging industries – thereby reducing energy consumption and upcycling waste to create new value streams.

Health and well-being (US\$16 billion, 0.5m jobs): The Philippines’ expanding middle class means more care is needed for the long-term health conditions linked to higher consumption and more sedentary lives. At the same time, income inequality and the geographic fragmentation of the Philippines’ ~7,000 islands have meant that access to health care is far from universal – 8 out of 10 Filipinos have never had a physical or medical check-up in their life, and 28 percent of women give birth without a trained practitioner in attendance. Technology enabled health solutions, like remote patient monitoring, can bridge unequal access to care. In addition to health risks, Filipinos face acute climate risk; 21 of the world’s most at risk cities are Filipino. Between 2006 and 2013, the Philippines experienced 75 natural disasters, mostly typhoons, tropical storms and floods that cost US\$3.8 billion in damages and losses. Despite this, insurance penetration is low. Only 16 percent of middle- and upper-income Filipinos are insured, and nationally, this figure drops to 1 percent. Risk pooling and extending insurance coverage for both climate and health risk is therefore a significant business opportunity in the Philippines.

Ensuring sustainable and inclusive growth will require visionary political leadership, strengthened institutions and the expansion of an enabling environment to crowd in private sector investment and scale up capital. *Better Business, Better World: Philippines* aims to set a direction of travel, showcasing the bountiful opportunities for private capital to scale commercially viable, sustainable growth opportunities advancing the UN’s Sustainable Development Goals to catalyse outsized inclusive, green growth for the Philippines.

Sustainable financing

Pursuing the major market opportunities highlighted in this report will inevitably bind economic growth in the Philippines to greater social inclusion and environmental protection across the region, creating a new sustainable model for development. But realising their full potential will depend on unlocking the necessary investment and renewing the social contract between business, government, and civil society.

Across Asia, the investment needed to develop all the opportunities across these four systems is almost US\$1.7 trillion a year. In the Philippines, we estimate that funding need to be an annual US\$25 billion. This infrastructure is needed in a range of sectors – energy, transportation, agriculture, water – and will need to take many forms, from schools and hospitals to broadband networks that supply high-speed internet access. Fortunately, the Philippines has been mobilising record levels of foreign direct investment, which reached US\$9.5 billion in 2017. However, the risk profile of many of the necessary infrastructure projects could deter private investors. But this hurdle might be overcome by expanding ‘blended financing’, where public and philanthropic bodies take on the high risk and more policy-sensitive tranches of an investment, encouraging private investors to fill the remaining gap at lower risk.

Critical pathways to accelerate action towards fulfilling this funding gap are mobilizing local private capital, creating an enabling environment, building capacity with local infrastructure finance. The Government of Indonesia provides a good example of this, with its first-of-its-kind blended finance platform called “SDG Indonesia One” with PT SMI, which has attracted over US\$2.5 billion in committed funds.

Ultimately, however, the most crucial element of closing the funding gap is developing a pipeline of investible projects – clear investment opportunities with long-term commercial return. This report showcases the priority sectors and hotspots that can be leveraged to build this project pipeline.

Renewing and energising the social contract

The Philippines' current growth model has delivered rapid growth and increasing national wealth but is starting to create growing amounts of environmental and social friction. The Philippines needs to start a transition to a new growth model and the SDGs provide the right lens to inform it.

Mobilising investment and an action agenda towards delivering the Global Goals requires the alignment of interests, incentives and policies between the public and private sector. To deliver to the opportunity all parties need to cooperate more than ever before and for that to happen trust across them is crucial. Portfolios and investment decision-making need to be shifted to make SDGs, green finance, sustainable infrastructure and development become the norm. Businesses must make sure they create well-paid jobs and provide decent working conditions and training; The government must make sure policies are clear, aligned, and create an enabling environment for the Global Goals. They must avoid the waste, inefficiency, and corruption that ambiguous and contradictory policies – such as fossil fuel subsidies – encourage today. Civil society also has a critical role to play both with innovative thought leadership and by holding those in power to account.

This new approach requires a paradigm shift that requires all parties to share a common vision and agree on their roles for delivering to it. The current social contract is based on competition and social fragmentation. We need to create the incentives for the key leaders in government, private sector and civil society to redefine how all interact in the Philippines. As the country's wealth increases and the middle class grows – the World Economic Forum forecasts that the Philippines' burgeoning middle class is set to exceed the spending power of Italy's middle class by 2030 – it will become increasingly crucial that the country's growth model leaves no-one behind.

This report shows how business, government and civil society in the Philippines can and should be guided by the same, inspiring vision of a country that is economically dynamic, socially inclusive and environmentally stable. Both the business and the moral case for doing so are crystal clear. By taking this route, the Philippines can set an example for the rest of the region and the world.

1. Why the Global Goals matter for business leaders in the Philippines

The Philippine growth story has been remarkable. The Philippines has sustained nearly 7 percent annual economic growth between 2010-2018, keeping the country on track to achieve 'upper-middle-income' status later this year, and become a US\$1 trillion economy by 2030. FDI has grown to record levels, the manufacturing sector is thriving, labour productivity is improving, and the country has become a market leader in the global information technology-business process outsourcing (IT-BPO) industry. Investors

are increasingly confident due to the optimistic economic prospects and attracted by the country's large domestic market, young English-speaking workforce and prime location in the region.

However, these economic successes mask major fault lines in the Philippines' current model of development. While the green shoots of Filipino growth are blossoming, there are large structural challenges the economy must overcome to create an enabling environment that can continue attracting capital and allow Philippines to catch up with the regional FDI leaders Singapore and Indonesia.

The Philippines is acutely vulnerable to climate risk; of the 10 world cities most exposed to natural hazards, 8 are in the Philippines. These risks are exacerbated by institutional, planning and structural failures – eg. high population density in hazard-prone areas, low enforcement of building codes and construction standards, and the degradation of forests and natural coastal protection – and disproportionately affect the poor.

Further, Philippines has the most expensive household energy prices in the region, at 10.2 PHP/kWh (\$0.20/kWh). Its energy sector is heavily reliant on fossil-based power plants. In 2016, over 75 percent of total generation came from fossil-based plants (most of which is imported). Philippines' continued reliance on fossil fuels is at odds with both the economic and environmental imperative for an energy transition, and its commitment to future fossil fuel investment risks keeping prices high, and creating stranded assets.

On the social side, much more work needs to be done to ensure that rapid and sustained growth becomes truly inclusive. Of the 94 million people living in the Philippines, almost one third live in poverty and 44% live in densely populated slum areas across the country – a figure growing by 3.5% annually. Filipino workers have also been prevented from sharing in the national growth story. Despite average GDP growth of 5.4% between 2001 and 2016, real wages stagnated during the same period, and in fact fell in 7 of the 15 years – a consistent trend across education levels, sectors, and type of work. Uncompetitive market structures, an abundant labour supply, and weak wage bargaining structures have meant that national growth has been captured as profit by companies and the wealthy. While unemployment is relatively low at around 5%, underemployment is much higher at 14%, representing 5.5 million Filipinos who are in-work but looking for further employment. Youth unemployment also remains high at 16% indicating widespread skills mismatch nationally. These trends must be reversed to prevent skilled emigration, and to support the Filipino labour force to withstand the pressures of automation.

The Philippines is setting a global standard for gender equality – ranking 8th in the Global Gender Gap rankings as the top Asian country - but many issues remain. Women in lower income groups still confront lack of opportunities, over 75% of women in these income groups have difficulty in accessing healthcare. The labour market also remains unbalanced; of the 24.5 million economically inactive Filipinos, 7 out of 10 were women. Of those in the labour market, female wages were 8.5% less on average than those of their male counterparts. The economic and moral imperative is huge – increasing women's participation in the labour force accounts for 58% of the Philippines GDP potential – a US\$40 billion opportunity by 2025.

Finally, the ease of doing business. The Philippines ranked at 99th/190 in the World Bank's Ease of Doing Business rankings, and with over half (54 percent) of the executives reporting the widespread incidence of corruption and bribery – the second worst in the region after Malaysia. The World Economic forum identified 'inefficient government bureaucracy', 'inadequate supply of infrastructure', and 'corruption' as

the three most problematic factors for doing business in the Philippines. Government policy demonstrates a willingness to tackle the issues at hand. For example, the ‘Build, Build, Build’ agenda aims to raise spending on crucial infrastructure like roads, bridges, railways and ports from less than 5% of GDP to more than 7% (P8.6 trillion / US\$164 billion) by 2022, and the Anti-Red Tape Act has cut the average waiting time for business permits from 48 days to 28 days between 2007-2017. However, much more needs to be done to build institutional trust and investor confidence.

The Philippines has a clear opportunity and imperative to embrace a new economic model capable of sustaining robust, inclusive growth in the 21st Century – one that is not only low-carbon and environmentally sustainable, but that also recognises how tackling poverty, inequality, and lack of financial access can create new market opportunities for smart, progressive, profit-oriented companies. This report offers a compelling alternative growth model based on pursuing strategies in line with the 17 UN Global Goals for Sustainable Development (Exhibit 1). These 17 Global Goals and their 169 component targets – formulated through collaboration with governments, businesses, and civil society – provide a lens to guide the new paradigm of growth.

Setting business strategy and transforming markets in line with the Global Goals will reframe the Philippines’ environmental and social challenges as economic growth and development opportunities. By 2030, this will have opened up an economic prize worth more than US\$82 billion and untold social benefits across the country.

EXHIBIT 1
The 17 Global Goals



This report is based on research presented in *Better Business, Better World*, published by the Business and Sustainable Development Commission in January 2017. This research identified the 60 most significant business opportunities related to pursuing the Global Goals in four industry systems worldwide: food and agriculture; cities; energy and materials; and health and well-being. This report details the research findings and case studies particularly relevant to the Philippines.

Across the Philippines, business pioneers are already leading with innovative business models and technologies to unlock sustainable opportunities in line with the Global Goals. They are at the forefront

of renewable energy and in using digital technologies to manage disaster risk. They are leading in creating affordable housing for a burgeoning urban population and are central to the LED lighting revolution. These pioneers realise that BAU models will not sustain growth into the future, and are seizing the opportunity to position themselves at the forefront of the Philippines' sustainable development. That is why nearly 30 companies throughout the country have already signed up to the 10 principles of the UN Global Compact, a guide to sustainable business behaviour for companies around the world. Others can follow the pioneers' lead by incorporating the Global Goals into their core growth strategies, value chain operations and policy positions, whatever the scale of their business.

Box xx. The Philippines Development Plan: Key outcomes

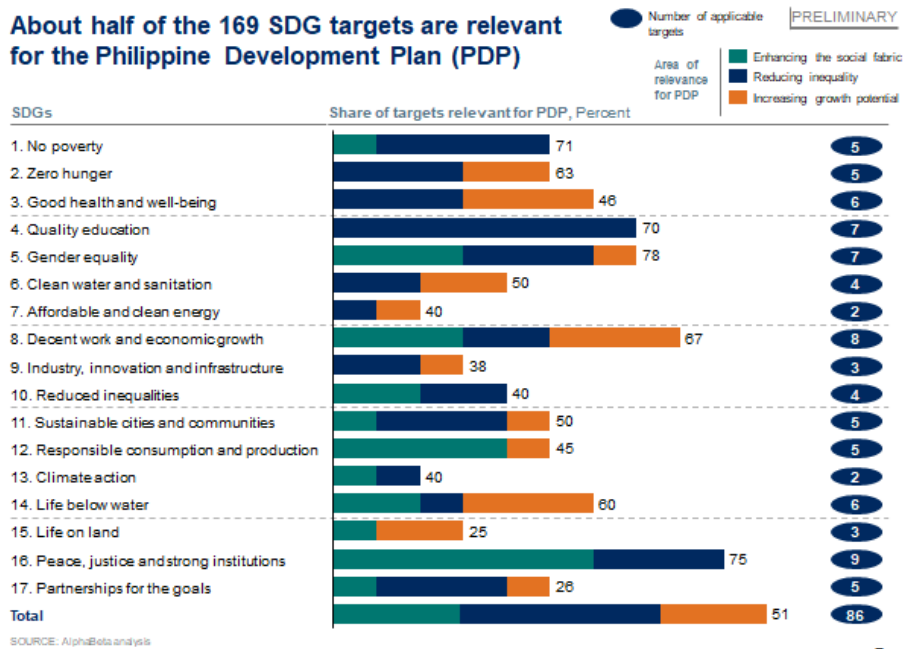
Philippine Development Plan 2017 – 2022 area	Sub-components of Philippine Development Plan 2017 – 2022	Relevant SDGs	Examples
MALASAKIT <i>Enhancing the social fabric</i>	The aim is to regain peoples' trust in public institutions and cultivate trust in fellow Filipinos Includes: <ul style="list-style-type: none"> Ensuring people-centric, clean, and efficient governance Pursuing swift and fair administration of justice Promoting Philippine culture and awareness 	 	<ul style="list-style-type: none"> A key focus of SDGs is on improving governance, including tackling corruption
PAGBABAGO <i>Reducing inequality</i>	Ordinary Filipinos will feel the change from inequality-reducing transformation Includes: <ul style="list-style-type: none"> Expanding economic opportunities in a) agriculture, forestry, and fisheries (AFF) and b) industry and services (I&S) Increasing access to economic opportunities Accelerating human capital development Reducing vulnerability of individuals Building safe and secure communities 	        	<ul style="list-style-type: none"> A key focus of SDGs is to promote and enhance quality education SDGs could provide new investment opportunities to build sustainable cities
PATULOY NA PAG-UNLAD <i>Increasing growth potential</i>	It is imperative that economic growth is accelerated and sustained for continued growth Includes: <ul style="list-style-type: none"> Advancing technology adoption Stimulating innovation Maximising demographic dividend Improving market efficiency Ensuring ecological integrity, clean, and healthy environment 	     	<ul style="list-style-type: none"> A key focus of SDGs is to promote economic growth as well as environmental sustainability

If the Philippines chooses not to embrace the Global Goals, the costs of the global burdens described above will continue to grow. This will result in less stable and less equitable societies, an irreversibly damaged environment, and higher political risk. Increased volatility will weaken business conditions and further curtail growth. Thankfully, the Philippine government has already placed sustainability at the centre of their development agenda, and the Global Goals are highly relevant to the Philippine Development Plan 2017-2022 (PDP). The PDP aims to enhance the social fabric by regaining people's trust in public institutions and cultivate trust in fellow Filipinos, reduce inequality through expanding access to economic opportunities and building safe and secure communities, and increase inclusive growth by advancing technology adoption (see Box). There is still much more progress to be made to advance the PDP, and the government cannot deliver on the Global Goals without the help of business.

- Both Ambisyon Natin and the Philippines Development Plan set out an ambitious vision for the next phase of the Filipino growth; a roadmap for long-term sustainable development – with social fabric enhanced, inequality reduced, and the country's

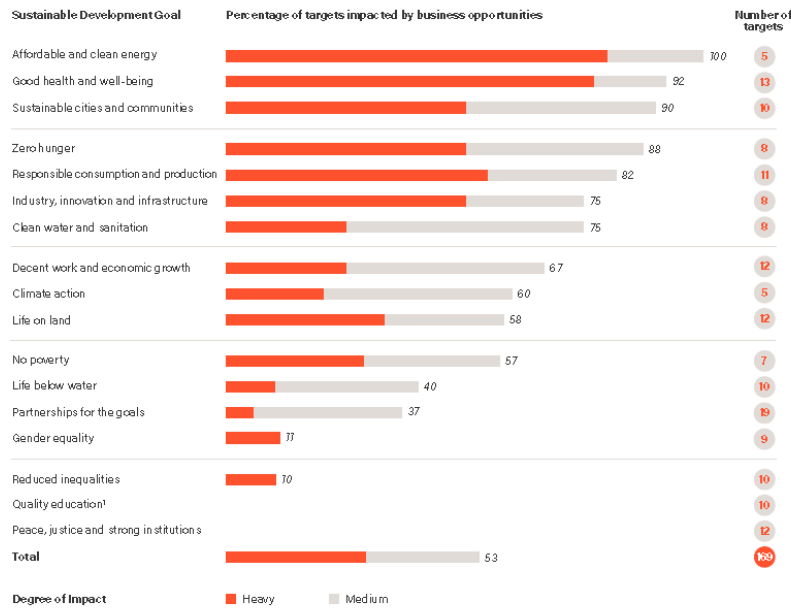
growth potential maximised – building economic and structural resilience to weather immediate and long-term technological and environmental challenges.

About half of the 169 SDG targets are relevant for the Philippine Development Plan (PDP)



Now is the time for business to embrace the tremendous opportunity to scale SDG-aligned business models. Our analysis of the impact of the Global Goals in the four industry systems we studied shows that private sector activity in these key areas will be crucial to delivering more than half of all the 169 Global Goal targets worldwide (Exhibit 2).

EXHIBIT 2 The business opportunities significantly impact more than half of the 169 SDG targets



Source: Literature search; AlphaBeta analysis

¹ Not directly impacted as this analysis covered only four systems: food and agriculture, cities, health and well-being, and energy and materials.

Achieving the Global Goals by 2030 is an ambitious vision. But for responsible, far-sighted businesses, it's a vision that offers significant growth through solving the world's biggest problems. As more and more businesses choose that vision as their roadmap to growth, so general confidence in reaching the Global Goals will grow, creating powerful incentives for companies, governments and other stakeholders to plan and invest accordingly.

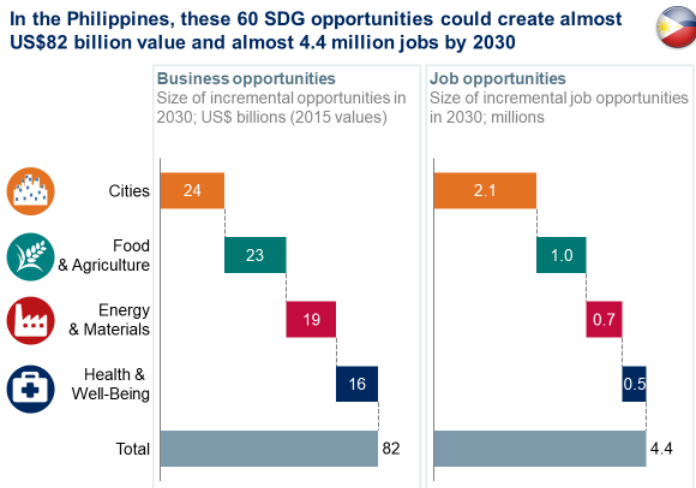
The rest of this report describes the major market opportunities opened up by achieving the Global Goals. Section 2 identifies the priority SDG-aligned 'hotspot' opportunities; key sectors where businesses can realise commercial return whilst enhancing social and environmental outcomes. This section also showcases how some market-leading companies have already begun to capture and multiply those opportunities to build a better world. Section 3 shares the impact that these opportunities will have on jobs, as well as addresses the need for more decent work and training. Section 4 details sustainable finance instruments that will unlock investment needed to achieve the Global Goals. Section 4 shows how businesses can contribute to essential progress on the social goals and regain lost trust through a

new social contract with civil society (including individual citizens as well as nongovernmental organisations) and governments.

2. Major market opportunities opened up in the Philippines by delivering the Global Goals

The Business and Sustainable Development Commission has previously identified US\$12 trillion in annual business opportunities that will open up for the private sector if it delivers the Global Goals across four systems: food and agriculture; cities; energy and materials; and health and well-being. These categories were chosen for their economic impact and relevance to achieving the Global Goals. They give an idea of the significant economic prize to be claimed in pursuing the Goals and help companies identify where to focus their efforts in order to achieve the greatest returns. (See Box xx. *Quantifying business opportunities linked to Global Goals.*)

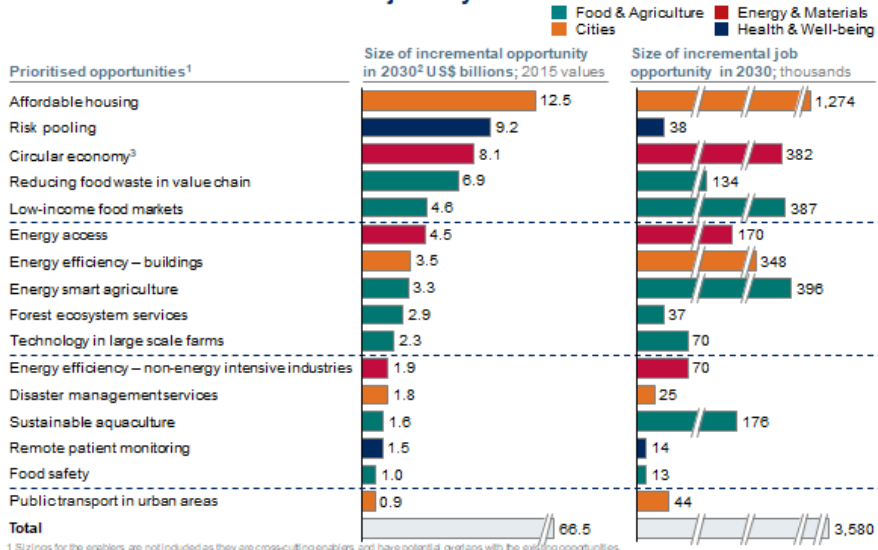
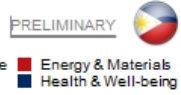
Emerging and developing economies have the greatest potential for change, representing more than half of the total value of business opportunities created by achieving the Goals. The Philippines' large urban population, growing middle class, and prime geographic location makes it very well positioned to develop a low-carbon, socially inclusive economy aligned with the Global Goals. Our research shows that by 2030, the 60 largest opportunities created by achieving the Global Goals could generate business revenues and savings worth more than US\$82 billion in the Philippines alone, out of the total global prize of US\$12 trillion (Exhibit xx).



The 16 largest opportunities account for 80 percent of this prize (Exhibit xx). These are (1) affordable housing; (2) risk pooling in healthcare; (3) circular models in packaging, automotive, electronics, machinery and equipment; (4) reduced food waste in the value chain; (5) low-income food markets; (6) energy access; (7) improved energy efficiency in buildings; (8) energy smart agriculture; (9) forest

ecosystem services; (10) technology in large-scale farms; (11) improved energy efficiency in non-energy-intensive industries; (12) disaster management services; (13) sustainable aquaculture; (14) remote patient monitoring; (15) food safety; and (16) public transport in urban areas.

These 16 opportunities could create about US\$66 billion value and over 3.5 million jobs by 2030



¹ Sizings for the enablers are not included as they are cross-cutting enablers and have potential overlaps with the existing opportunities.
² Based on estimated savings or projected market sizings in each area. Only the high case opportunity is shown here.
³ In this analysis, "Reducing packaging waste", "Circular economy – Automotive", "Circular economy – Appliances", and "Circular economy – Electronics" have been combined into one opportunity.
 SOURCE: Literature search; AlphaBeta analysis

The total economic prize for pursuing the Global Goals will be bigger than the estimated US\$82 billion available from opportunities in these four areas. More value can be released from other sectors critical to sustainable development, notably information and communications technology (ICT), education, and consumer goods. Globally, these sectors could add a further 66 percent to the overall US\$12 trillion opportunity, identified in the global *Better Business, Better World* report. Economic gains from achieving all the social Global Goals will add substantially to the total prize the private sector could share in. Achieving gender parity alone could add between US\$12 trillion and US\$28 trillion to global growth by 2025. In the Philippines, an additional US\$40 billion a year, above business-as-usual GDP, could be added to GDP by 2025 if gender equality is prioritised.

Better health and education will increase labour productivity. Reduced social inequality and environmental stress will reduce political uncertainty, lowering business risks and multiplying returns on investment. And pricing the actual costs of environmental damage – such as those caused by climate change – into these value projections increases the true size of the global prize by a further 40 percent. Seen in this light, the Global Goals offer a compelling growth strategy for individual businesses, business generally and the world economy.

In the following sections, we explore some of the high-potential opportunities in each of the four systems, drawing on research findings and case studies particularly relevant to the Philippines.

Box xx. Quantifying the business opportunities linked to Global Goals

To understand the business opportunities, we focus on four ‘industry systems’, which we define as areas of economic activity with common value drivers. For example, the food and agriculture industry system embraces all the economic activities that deliver value while providing food to consumers, from fertilisers to farm production, logistics, and retail. We focus on industry systems rather than traditional business sectors because the generally narrower definition of business sectors fails to capture the dynamic changes in the business landscape that pursuing the Global Goals could trigger, particularly in related value chains. Based on criteria such as economic impact, geographical relevance, and importance for achieving the Global Goals, we prioritised the following four industry systems:

- **Cities** – including vehicles and transport-related sectors, housing, construction, and utilities;
- **Energy and materials** – including mining, oil and gas, renewable energy, power generation, and durable goods;
- **Food and agriculture** – including food production, fertilisers, distribution, and retail; and
- **Health and well-being** – including pharmaceuticals, primary and secondary care, gyms, prevention, and well-being.

Our research team engaged extensively with industry and academic experts from each industry system and consulted industry reports and academic literature to identify and estimate the size of the major opportunities for the private sector. The researchers established that these opportunities will be worth at least US\$25 billion globally by 2030¹. Some of the benefits of implementing the Global Goals, such as increased workforce participation through gender equality, are diffused across the economy. We focused instead on areas that generate specific opportunities for businesses. The opportunities we identified are based on existing commercialised technology, though we note that many important opportunities that relate to the Global Goals will arise from technologies that are not yet known or are at an embryonic stage in their development.

The monetary figures in this report value what the annual opportunity will be in 2030, using 2015 US dollar figures, rounded to the nearest US\$5 billion¹¹. The figures are based on estimated savings (such as the value of land saved from improving smallholder yields) or market size (such as food market demand from low-income consumers who move out of extreme poverty). In each case, we have measured the incremental size of the opportunity in a Global Goal versus a business-as-usual (BAU) scenario. For example, the opportunity to improve smallholder farm yields is calculated as the productivity improvement expected from implementing the Global Goals above that expected in a BAU scenario.

The Global Goals scenarios are based on achieving all relevant Global Goals targets by 2030, and assuming that the rise in the average global temperature will remain at or below 2 degrees Celsius by the end of the century. They do not build in carbon pricing or other externalities, except for forest ecosystem services, where carbon pricing is a principal revenue source. The BAU scenarios are derived from existing policies and policy announcements. Where possible, we

have used multiple sources for each opportunity to generate a range of values. The estimates are based on a bottom-up microeconomic perspective and do not take into account interaction and general equilibrium effects.

Cities

By 2030, 60 percent of the world's population will live in cities, up from about 54 percent today – adding over 1 billion people to cities over the next 15 years.¹ Over the next two decades, nearly all of the world's net population growth is expected to occur in urban areas, with about 1.4 million people – close to the population of Stockholm – added each week.² Asia is at the heart of this transformation, and nowhere is this story more demonstrable than the Philippines.

Urbanisation is a crucial driver of economic growth: no country has ever climbed from low-income to middle-income status without a significant population shift into cities.³ The reasons include the scale benefits to economies from larger cities, as well as the higher wages that people typically receive as they shift from farming to urban manufacturing and services. However, urbanisation also poses a series of challenges to the value chains supporting mobility, infrastructure, and housing

With more than 45 percent of its population living in cities, the Philippines is a highly urbanised country. Manila is the world's most densely populated city, with 12.8 million inhabitants residing in Metro Manila alone, and over 23 million in its broader surrounding area, a figure expected to rise to 30 million in 2030. This rapid urbanisation has created some new jobs, educational opportunities and better living conditions for some, but has also brought some serious challenges: a deficit of affordable, secure housing, soaring energy demand, crippling pollution and traffic gridlock.

Of the world's top 10 cities most exposed to natural hazards, eight are in the Philippines. The number of deaths from earthquakes (and subsequent fires) has remained high in some cities around the country due to poor housing construction, unsafe settlements, and the lack of early warning systems. The country's inherent climate risk is exacerbated by institutional, planning and structural failures for example, high population density in hazard-prone areas, low enforcement of building codes and construction standards, and the degradation of forests and natural coastal protection. This vulnerability has significant socio-economic effects – notably on poverty and productivity. Adaptation and building resilience must be at the heart of the Filipino growth story. Cities are also facing major water and sanitation challenges. Of the country's 22.7 million families, around 12 percent still have no access to water supply, sewerage and sanitation.

The UN's Global Goals agenda proposes shifting city development onto a sustainable pathway. This shift will have a big impact on the value chains supporting mobility, infrastructure, and housing in Philippine cities, leading to a number of disruptive business opportunities. Together, these opportunities could be worth US\$24 billion in 2030. Business opportunities with the greatest urban economic, environmental,

¹ Based on UN global population forecast of 8.5 billion in 2030.

² UN Department of Economic and Social Affairs, Population Division, 2014. World Urbanization Prospects, the 2014 revision.

³ Commission on Growth and Development, 2009. *Urbanization and growth*.

and social impact lie in affordable housing, green public transport systems, and disaster management systems to weather outsized climate risks.

Affordable housing (worth US\$12.5 billion per year by 2030)

The growth of cities can run counter to social inclusion, particularly as housing becomes increasingly expensive. By 2025, one-third of the global urban population – 440 million urban households – could lack affordable, adequate housing.ⁱⁱⁱ To replace today's inadequate housing worldwide and build the additional units needed by 2025 would require US\$16 trillion investment.^{iv} Yet this shortage of affordable housing offers significant opportunity for private investors, and businesses are already sensing the opportunity and tapping into the affordable housing market.

The Philippines is projected to have a housing need of 12.3 million by 2030—given a backlog of 6.7 million from 2001 to 2015, and a projected housing demand of 5.6 million from 2016 to 2030. In 2009, more than 40 percent of total urban households in the Philippines are considered sub-standard.⁴ The country also has a high prevalence of homelessness and slum dwelling, where approximately 4.5 million of the population is homeless and about 17 million live in slums — growing by 3.5 percent annually. People living in slums are particularly vulnerable to risks related to natural disasters, as they are often located in hazardous areas without sufficient protection. This creates a growing demand for quality housing.

The government has taken note of the challenges, and has made affordable housing a key priority. AmBisyon Natin places housing and urban development as one of its priority sectors. The PDP 2017-2022 targets delivering direct housing assistance to over 1.5 million households, and 7 million new affordable homes for 2023-2030. The government has also allowed municipalities to impose an idle land regulation and taxation to enforce penalties on idle land to discourage speculative land hoarding, helping the affordable housing market expand.⁵

However, realising this opportunity will require private sector efforts to unlock new land through innovative mechanisms (e.g. providing density bonuses to developers that permit them to increase the floor space on a plot of land in return for providing land for affordable units); employing available efficiency techniques to reduce costs by up to 30 percent; reducing operations and maintenance costs through energy efficiency retrofits and consolidated supply purchasing; and supporting access to lower-cost financing options for developers and purchasers.

Turning this gap into an opportunity will depend on three broad initiatives. The first is 'inclusionary' housing development strategies that increase the supply of low-cost housing by giving developers planning concessions in return for providing affordable housing units. The second initiative is lean construction, which lowers the costs of building by adopting industrial techniques such as prefabricating components off-site and assembling them on-site, and standardising major operations like structural design and finishing elements. The third initiative is low-cost property management to reduce the cost of running homes. Techniques include retrofitting units with more energy-efficient appliances, and integrating repair and maintenance services in a 'one-stop shop'. Low-cost housing should also be

⁴ MGI Affordable housing. October 2014.

⁵ Richard F. Dye and Richard W. England, "The principles and promise of land value taxation," in *Land value taxation: Theory, evidence, and practice*, Richard F. Dye and Richard W. England, eds., Lincoln Institute of Land Policy, 2009.

resilient, aiming to reduce inherent vulnerabilities. If resilience to extreme weather is not taken into account, houses are more likely to need to be rebuilt.

In Cambodia, My Dream Home aims to provide quality and affordable housing to locals who cannot afford traditional houses, through the production of affordable, eco-friendly and easy-to-construct bricks (20-40 percent cheaper than traditional bricks). The company uses abundant, sustainable, local materials to construct Lego-like interlocking bricks that take less cement, labour, and time to fit together than traditional bricks. In the Philippines, 8990 Holdings, Inc., together with its subsidiaries, develops low-cost mass housing projects and has engaged in building socialised housing units in Deca Homes Guadalupe in Cebu, delivering a combined total of 408 units worth more than US\$8.3 million. Ayala Land, one of the country's most prominent developers, also has a socialised housing arm called Amaia Land which is pursuing projects in provinces where homes cost less than US\$8,450.

Despite these opportunities, there is a chronic underinvestment in the sector for reasons across the value chain which lead to potentially low returns, lengthy pay back periods, and high risk. But several investable instruments address these approaches to affordable housing, such as microfinance funds, mortgage liquidity facility, housing bonds, mortgage guarantees, housing investment funds, pay for success vehicles, and real estate investment trusts (REITs). The Philippines already has a Public-Private Partnership Centre that addresses housing challenges, facilitating more blended finance models in the country's affordable housing market.⁶ *(For more examples of blended finance models, see Section 4.2 Mobilise blended finance.)*

- ✓ **Via Verde Homes.** Providing a green alternative for low-income households in the Philippines. The Philippines has one of the highest household electricity rates in the region, making housing expenses unaffordable for low-income Filipino families. Via Verde is the country's first grid-connected, solar-powered mass low-cost housing community, which provides owners with significant savings on electricity costs. They are located in San Vicente, Santo Tomas, Batangas, near Manila, where housing demand has increased due to the migrant workforce of commercial and manufacturing establishments in the area. Via Verde Homes is also one of the country's first recipients of the Excellence in Design for Greater Efficiencies Certificate given by the IFC for meeting global standards of Green Building. Every house in Via Verde consumes 40 percent less energy, 25 percent less water and 38 percent less energy into making of building materials.
- ✓ **NevHouse.** Provides innovative solutions for creating low-cost, rapidly deployable shelters made from recycled plastic waste. The Philippines is uniquely vulnerable to natural disasters – 8 of the 10 most at risk cities in the world, are in the Philippines. In 2013 Haiyan struck the Philippines, destroying 90 percent of the south eastern city of Tacloban, leaving one million people homeless. NevHouse structures use waste to create affordable shelter. They design eco-friendly, modular integrated housing solutions, embedding energy, water and sanitation needs. Their structures are designed

⁶ MGI Affordable housing. October 2014.

to withstand natural disasters and can be assembled on-site in 3-5 days with no skills required. NevHouse has deployed their technology in other disaster-struck locations, like Vanuatu, to great success, and has a secured mandate from Vanuatu's Prime Minister to supply 40,000 new homes. In meetings with the Mayor of Tacloban, plans were developed to deploy the NevHouse solution to address the acute housing problem.

Energy efficiency in buildings (worth US\$3.5 billion per year by 2030)

The building sector currently accounts for around one-third of total final energy consumption and more than half of all electricity demand. The way buildings are designed and constructed today will affect but also the world's energy consumption patterns and environmental conditions for many years to come. More than half of the world's new construction is taking place in Asia.⁷ In the Philippines, the building sector accounts for significant share of energy consumption, with around 50 percent to 60 percent of total electricity supply used by buildings, the two biggest contributors of which are lighting and cooling. Given the expensive energy prices in the Philippines and the continuing reliance on fossil fuels, improving energy efficiency will bring large commercial savings and positive environmental outcomes.

There are large opportunities to improve building energy efficiency through two main channels. Firstly, heating and cooling performance can be improved by retrofitting existing buildings and installing more efficient technology in new buildings, or alternatively by shifting from building-level installations towards the expansion of district heating and cooling, which can deliver operational efficiency gains of up to 90 percent by linking electricity and heating sectors through cogeneration. Secondly, switching to efficient lighting, appliances and electronics can reduce demand.

The government is already focusing on power conservation, demand management, fuel efficiency, and fuel conservation. It has set national energy efficiency targets of 2030 – for residential buildings and commercial buildings, implied annual percentage savings are set at 1.2 percent and 1.9 percent respectively. The DOE and ADB launched the Philippine Energy Efficiency Project (PEEP), which has successfully deployed retrofitting projects reflecting huge savings. The lighting retrofit of the 12 government buildings in the Visayas region, which involves four city government buildings, seven educational institutions, and a state-owned hospital, is expected to generate potential energy savings of about 222 MWh. These may be translated to around US\$43,000 in monetary savings and 120 tCO₂ annual reduction in greenhouse gas emissions. The government also retrofitted 135 government office buildings and 4,000 public areas with energy-efficient lighting systems. It also distributed 8.6 million CFLs nationwide and established an efficient building rating system for new and retrofitted buildings, based on similar ratings models in many other countries.

A number of business models are associated with this opportunity, ranging from producing energy efficient building components through to providing energy services. Among the latter, there is potential for specialised energy services companies and utilities to provide funds for up-front investment and deploy their expertise in identifying and capturing energy-efficiency savings in the Philippines. Energy

Commented [NC1]: A Lopez group case study here would be great

⁷ BMI Research, 2015. "Global Construction Outlook 2015 – 2024: Cementing Asia's Dominance", BMI Research, 1 May.

Performance Contracts (EPC) can help to overcome capital constraints. These tie loan payments to the property or to the utility meter, instead of to the homeowner. While the US and Europe are currently leading in this area, energy service companies (ESCOs) are emerging in Asia to provide end-to-end turnkey efficiency services for owners of homes and businesses.

Trustpower created 'Loop', a self-installed electricity monitor capturing energy data to analyse and advise on consumption data. In the first year, Loop saves on average 20% of the electricity bill and 10% of related CO2 emissions. Over time, Loop gathers data to advise on higher impact solutions, such as sizing and financing PV and battery systems, to increase the average monetary and carbon saving.

There are, however, challenges in implementing reforms in existing buildings, since significant capital and product innovation are required to replace existing heating, cooling and lighting appliances in buildings. The key to achieving substantial reductions in building energy use is to analyse the building as an entire integrated system, rather than focusing on incremental improvements to individual energy-using devices. A range of levers could be applied to help tackle these barriers, including enacting energy-efficiency standards in new construction and developing innovative financing mechanisms to help overcome capital constraints.

- ✓ **Mondelez Go Green Programme.** The continued use of fossil fuels, such as coal and gas, have been proven detrimental to the environment. Most businesses and cities continue to rely on fossil fuels due to their prevalence and reliability. However, some are making the switch to cleaner fuels. Mondelez Philippine's Go Green Programme installed a biomass energy facility that uses biodegradable and renewable materials such as rice and coconuts husks to power the company's production plants. The company therefore eliminated carbon emissions equivalent to 137 plane trips from Manila to Australia and back. It also saved enough energy to light and run its plants for 4.3 months. Every year Mondelez Philippines has been identifying areas in its day-to-day operations that can contribute to reduction goals of the programme, with the aim to reduce its use of water, energy and carbon emissions by 5 percent year-on-year.
- ✓ **Lopez Holdings Corporation.** This Filipino conglomerate has investments in major development sectors, such as power generation and distribution, whereby they acquired the Energy Development Corporation (EDC). The EDC is the largest producer of geothermal energy in the Philippines. To save on energy and to reduce the operation of power plants run by fossil fuel, the EDC often engages with energy conservation programs. Energy Audit Teams periodically conduct audits of company facilities to identify potential savings in energy utilization. Office audits have saved the company \$42.5 thousand per year, and other conservation activities include scheduling elevator use, air condition use based on recorded ambient temperature, switching off lights during lunch breaks, car pooling and other initiatives. The group also uses Light Emitting Diode (LED) technology, which uses only one seventh of the energy consumed by an ordinary incandescent lamp. LED technology has been adopted by the company in various applications such as flashlights, torches, radios and streetlights.

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Disaster management services (worth US\$1.8 billion per year by 2030)

Natural disasters involve widespread human, material, economic or environmental impacts, and cities are largely underprepared to manage natural disaster risks. Asia has suffered disproportionately from losses caused by natural disasters. The Philippines is particularly vulnerable to natural hazards because it lies along the Pacific Typhoon Belt and is within the Pacific Ring of Fire; it is hit by 20 typhoons a year, and is additionally at risk of volcanic eruptions, quakes and floods, incurring an estimated US\$3.5 billion in annual asset losses. According to a 2012 ADB study, about 85 percent of the Philippine economy is prone to natural disasters. Since 1990, it has been affected by 565 natural disaster events that have claimed the lives of nearly 70,000 Filipinos. In 2013, Cyclone Haiyan – the most powerful cyclone in recorded history – destroyed 90% of the city of Tacloban, leaving one million people homeless.

It is abundantly clear that the Philippines needs to develop with climate adaptation and resilience at the heart of its growth story. The government has recognised this imperative, shifting its focus from emergency relief to disaster risk reduction and prevention with the National Disaster Risk Reduction and Management Plan 2011-2028 (NDRRMP). This plan sets down the expected outcomes, outputs, key activities, indicators, lead agencies, implementing partners and timelines under each of the four thematic areas - Disaster Prevention and Mitigation, Disaster Preparedness, Disaster Response, and Disaster Rehabilitation and Recovery.

Additionally, the **Philippine Disaster Resilience Foundation (PDRF)** helps businesses to prepare for disruptions in service delivery and strengthening their capability to recover from natural disasters. PDRF developed and refined a nationwide platform that mobilizes, informs, and directs business contributions and engagement for disaster management. By using advanced communications software and technology, it monitors climate-related and natural hazards in close coordination with deployed resources in the field.

Business opportunities surround the use of technology to cater to emergency situations, such as surveillance and disaster notification systems, as well as safety structures to reinforce buildings. Key tools include early warning systems, emergency services, and other disaster response efforts in sectors such as transport, energy, water and solid waste. Technical analysis involves the development of large-scale city-wide GIS maps identifying a city's physical characteristics, such as topography and drainage, land use, transportation networks, water supply and sewage system, electrical grid and emergency response facilities. Findings from these analyses can serve as useful inputs to discussions about which resilience interventions are likely to be most effective

The Philippines has just completed a renewal and significant upsizing of its regional parametric insurance facility that is US\$390 million in size, 2 times larger than the previous year. Insurance-linked securities (ILS) investment fund manager Nephila Capital and Swedish state sector pension fund AP3 led, supported by reinsurance firms Munich Re, Swiss Re, AXA, Hannover Re, Hiscox Re, Allianz, and SCOR. The World Bank and the Global Facility for Disaster Reduction and Facility have collaborated to support the Philippines on capacity management and resilience building programmes by, for example, developing a flood management masterplan for Manila.

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Box xx. Water and sanitation

Ensuring access to clean water and sanitation remains a challenge in the fast-growing cities of the developing world. Increasing urbanisation has created additional pressures on already lacking water and sanitation infrastructure. Globally, 20 percent of urban dwellers still lack adequate sanitation facilities. Providing adequate water and sanitation for them is a major challenge and an important effort in improving public health. A major barrier to investments in water and sanitation is the subsidised prices of both water and wastewater treatment in many countries, which do not reflect the societal cost of managing this important resource. Poor access to these facilities contributes to health complications particularly in rural areas.

The Philippines' urban population is expected to reach 80 percent by 2025, outpacing most other Southeast Asian countries in terms of urbanization. Of the country's 22.7 million families, around 12 percent still have no access to water supply, sewerage and sanitation. Located in the nations' poorest provinces, 337 municipalities are still considered waterless, which fell short of the 2015 target of lowering it to 274. In the Philippines, as of 2017 only 43.5 percent of the population had access to piped water and only 2.4 percent had access to piped sewer service. Despite the 50 percent subsidy of the national government, under the National Sewerage and Septage Management Program (NSSP) for the establishment of sewerage services in the 17 highly urbanized cities outside Metro Manila, no projects have been implemented. Philippine's vulnerability to climate change and natural disasters exacerbate the gap in water infrastructure. Small water districts and utilities operated by LGUs have difficulty sustaining operations and generating capital for expansion due to low tariffs and consumers' low willingness to pay. The absence of a uniform regulatory framework prevents investments in water sanitation services.

The government continues to try to fill the gap and has targeted to provide access to safe water supply to over 95 percent of households by 2022 and access to sanitation to over 97 percent in its PDP. There is a significant opportunity for the private sector to collaborate with the government in building and maintaining water and sanitation infrastructure, however, large and long-term capital investments will be needed to match facilities for the growing urban population. Opportunities for inclusive business are found in expanding PPP for water and sanitation - despite complex institutional arrangements in the water supply and sanitation sector, local utility companies have become effective service providers partnering with LGUs through PPP. The PPP modality has increased access to water supplies and improved water quality - once a fair cost-sharing mechanism is established (in which tax and tariff expenses are not passed on to the poorest communities), it will be instrumental in expanding services to poorer households.

Manila Water is Ayala Corporation's provider of water and wastewater services to more than six million people in the East Zone of Metro Manila. It aims to fill the city's gap in water and used water services by expanding its presence and developing business models that allow it to participate in untapped sectors. As of November 2018, Manila Water installed an aggregate of 140,000 sewer connections within the East Zone, serving almost 200,000 households. The water facilities of Pasig North and South Sewage System, and Taguig North Sewage System have a combined treatment capacity of 275 million litres per day, which serves 690,000 homes. However, illustrative of the acute water issues in the Philippines, in March 2019, Manila Water

experienced a water shortage of 140 million litres per day caused by infrastructure delays, rising demand and the onset of summer shrinking supply at dams.

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Water.org, an international non-profit organization that pioneers market-driven financial solutions to the global water and sanitation crisis, created the WaterCredit Initiative to address the barrier of affordable financing of safe water and sanitation. It brings small, easily repayable loans to those who need access to affordable financing and expert resources to make household water and toilet solutions a reality. In 2014, Water.org expanded WaterCredit to the Philippines with the support of the Caterpillar Foundation and Swiss Re Foundation to work with microfinance institutions, providing technical support to build their capacity to provide a variety of water and sanitation solutions in urban and rural communities. From 2015 to 2017, partners conducted research, trained staff, designed their loan products and executed lending pilots. The program through 15 partnerships reached 2.4 million people and it provided over US\$105 million in loans. They aim to reach more than 3 million people with safe water and sanitation by the end of 2019.

Public transport in urban areas (worth US\$0.9 billion per year by 2030)

Efficient and reliable urban transport systems are crucial for the Philippines to sustain high economic growth. These systems play a significant role in reducing poverty by improving access to labour markets. In the Philippines, transport systems and related infrastructure will need to evolve so that cities can sustainably manage access and respond to changing mobility systems. In modern, denser cities with medium- and high-density housing, public transport is the most effective solution to urban mobility needs.

Mobility patterns associated with unplanned urban expansion and increased private motor vehicle use are a major source of greenhouse gas emissions. According to the International Energy Agency (IEA), in order to limit average global temperature increases to 2 degrees Celsius by 2050, 21 percent of all carbon reductions must come from within the transport sector.^v As improving access to public transport becomes a priority, the construction of roads for private vehicles will slow in favour of bus rapid transit (BRT) systems, railways, and metro networks. If a quarter of passenger kilometres were shifted from light-duty vehicles to a mix of public transport modes, it could reduce energy consumption by 5 Quadrillion British Thermal Units (QBTUs, or 'quads') in 2030, or the equivalent of 225 billion tonnes of coal.^{vi}

Investment in public transport has also been shown to cut congestion costs and reduce household transport expenditure by 20 percent.^{vii} Roughly 70 percent of Filipinos do not own a car, but public transport systems and roads are over-capacity and unable to cope with demand. Manila is the world's most densely populated city, with 12.8 million inhabitants residing in Metro Manila alone and over 23 million in its broader surrounding area. This population density has led to severe traffic and congestion. Metro Manila commuters and motorists spend on average 66 minutes stuck in traffic every day, the third longest average commute in Southeast Asia. According to a study by the Japan International Cooperation Agency (JICA), traffic congestion in Manila, caused by poor infrastructure, carried a daily price tag of US\$45 million in 2012 – a figure that is expected to almost triple by 2030 – and another US\$22.65 million in the Bulacan, Rizal, Laguna and Cavite area, amounting for 11 percent of the

country's GDP. These costs are based on value of time lost due to delay, fuel costs, vehicle operating costs, impact on health, and greenhouse gas emissions, among others.

Jakarta currently holds the dubious honour of having a longer average daily commuter traffic time of 68 minutes⁸, which costs the Indonesian economy an estimated US\$4.6 billion annually. To address this problem, the Government of Indonesia is investing US\$1.1 billion in a Mass Rapid Transit (MRT) system – a 15.7-kilometre-long route – to relieve the capital's traffic congestion from March 2019. The service is expected to serve 212,000 passengers per day, with the 15.7km route covering 13 stations in central Jakarta in under 30 minutes.

Environmentally, the transport sector, mainly tricycles, jeepneys, and buses, contributes a large portion of CO2 emissions, as 3.5 million registered motorcycles and tricycles release 10 million tons of CO2 into the atmosphere each year and consume close to US\$3 billion worth of fuel.

The government has plans to implement strategic infrastructure programmes and projects to encourage a shift from private to public transport, especially on mass transport, under its PDP. The ADB has provided technical assistance for the Davao Public Transport Modernisation Project, which includes the development of improved public transport operations that will cover the full urban area and cater for the growth in travel demand at the cities expanding edges. Also, the ADB approved New 6-Year Partnership Strategy for the Philippines. It will focus on accelerating infrastructure to improve links between regions and communities. Transport will make up 47 percent of ADB's Philippine operations from 2018-2021, up from 2.2 percent in the last 7 years.

There is a great opportunity for operators in the private sector – app builders, data processing companies, taxi cooperatives, phone carriers and makers, and payment systems providers – to provide better transportation services by building and operating public transport systems in close partnership with government and international finance sources.

Introducing new technology is the immediate option to mitigate transport emissions. Providing fuel-efficient and electric vehicles, low-emission bus technologies, electrifying rail networks and other sustainable modes of transport such as bikes are ways to reducing CO2 offsets,

The public transport sector can save a significant portion of imported energy by switching to energy-efficient electric vehicles, and improving current mass transit systems are “low hanging fruits” that will be cost-effective and able to serve millions of commuters. The cleanest buses today can reduce GHG emissions by more than 99 percent. Zero Emission Bus Rapid Deployment Accelerator (ZEBRA) is already working with Mexico City and São Paulo to increase their deployment of electric buses and expects to secure US\$1 billion from regional finance institutions to invest in zero emission electric drive technology in Latin America by 2021. Successes were seen in Medellín, Colombia, where the city issued in December 2018 a tender for 64 battery electric buses to be deployed by mid 2019. The city of Medellín has also committed itself to shift to zero emission bus purchases by 2030.

Further, electric bicycles or “e-bikes” are gaining in popularity worldwide. These are bicycles with an electric motor that riders can use to boost pedal power. While electric vehicles may receive more media attention globally, e-bikes dwarf them in current scale of demand: about 700,000 electric cars were sold

⁸ <https://www.rappler.com/business/190016-metro-manila-traffic-southeast-asia-study-bcg-uber>

worldwide in 2016 compared to roughly 35 million e-bikes.⁹ China remains the world's largest market for e-bikes, accounting for approximately 85 percent of global demand,¹⁰ while the Asia Pacific region as a whole accounts for approximately 95 percent of global demand.¹¹ Mobike China creates shared smart and dockless bikes, located, unlocked and paid for using smartphones. Mobike reported that more than 6 million active users together clock 20 million rides a day, where they have collectively cycles over 56 billion kilometres, with a carbon emission reduction at more than 1.2 million tonnes, the same as taking 350,000 cars off the road for a year.

- ✓ **Grab.** Allows Grab drivers to see congestion checkpoints to better manage traffic. Congestion in metropolitan Manila costs the economy more than \$60 million per day, but until recently, very little was known about Manila's congestion due to lack of equipment to collect traffic data. Traditional methods rely either on labour-intensive fieldwork or capital-intensive sensor data networks, which are slow and require substantial capital. Grab, the ridesharing firm, worked with the World Bank to develop a pilot open-source platform to understand and manage traffic better. It translates GPS data into anonymized traffic statistics, including speed, flows, and intersection delays. The data will help address issues of traffic signal timing plans, public transit provision, roadway infrastructure needs, emergency traffic management, and travel demand management.

- ✓ **Beep.** AF Payments Inc.'s tap-and-go payment' system Beep card is widely used today to pay for transport services, with over 5 million beep cards are currently in the market. It can be used in point-to-point (P2P) buses plying key cities in the metro, and recently, in public utility vehicles such as modern jeepneys and, e-trikes deployed in the walled city of Intramuros. These cards are used to pay for the fare at elevated trains and select transportation, toll fees, as well as for purchases at select retail outlets. Shifting from cash to electronic payments can lower the cost of doing business, improve customer loyalty, make it easier to track transactions, and lessen the leakage of funds. In a bid to develop cashless communities, Beep collaborated with Property Company of Friends to offer beep-enabled resident identification cards for access to transportation to and from and within its masterplanned communities in Cavite—Lancaster New City and Bellefort Estates—and entry to their key facilities. Beep offers Filipinos a more convenient and modern way of paying, facilitating everyday transactions. It is a stored value contactless card that can be used for fare payments in Metro Manila's 3 elevated railways: LRT1, LRT2, and MRT, select city buses and various retail establishments for over-the-counter payments. AF Payments Inc. is a partnership between Ayala Group and First Pacific Group, and this project is under the Public-Private Partnership scheme of the Republic of the Philippines through the Department of Transportation.

⁹ Navigant research, 2016. Electric bicycles.

¹⁰ INSG Insight, 2014. The global e-bike market.

¹¹ Statista, 2016. Worldwide sales of electric bicycles in 2016, by region (in million units).

Food and agriculture

The global food system faces unprecedented challenges. There are 800 million undernourished people and 2 billion suffering from micronutrient deficiencies; crop yields are growing much more slowly than world population, which means that up to 220 million additional hectares of cropland could be needed by 2030 to meet expected demand for food, feed and fuel; and major environmental stresses, including water scarcity, loss of biodiversity, unsustainable fertiliser use and climate-driven extreme weather, all threaten supply.

In the Philippines, food and land use systems are vital to growth, self-sufficiency and environmental health. Although agriculture as a share of Philippines' GDP has fallen from over 30 percent in the 1970s to around 8 percent in 2018, the sector is still of great importance to the Philippines, providing jobs for almost 11 million people – over 26 percent of the work force, and almost 60 percent of the country's poor.

However, several constraints in the agricultural sector impede its growth and GDP contribution, including the country's vulnerability to natural disasters, low productivity and scarce extension and capacity-building services. Current levels of agricultural infrastructure are also a significant block to productivity and sectoral growth. At present, approximately 40 percent of food is lost in production, post-harvest and processing – of which half is attributed to infrastructure constraints. The Philippines' high vulnerability to natural disasters partially accounts for its poor agriculture performance, costing the sector billions of dollars.¹²

There has been an increase in the severity and intensity of tropical cyclones in recent years, resulting in annual damages equivalent to 3 percent of total agriculture output in the late 2000s due to typhoons, droughts, and floods. The risk of natural disasters is aggravated by the incidence of poverty, as it hampers the ability of farmers to make decisions and investments that can mitigate the effects of disasters. Equally, the country's once abundant biodiversity and forests are being threatened. The Philippines is losing approximately 47,000 hectares of forest cover annually and is down to 24 percent of its original forest cover of the 1900s, significantly less than the 54 percent cover needed to protect against landslides and ensure water supply from the watersheds.

The country is already making efforts to modernise and strengthen its agriculture sector. The level of government support to agriculture is relatively high, mainly relying on rice support and input subsidies. The government is also aiming to construct ten water resource projects as well as irrigation systems that will ease water scarcity and raise agricultural output. Both state and private companies are promoting the adoption of advanced technology and smart farming methods to increase harvests and minimize losses. Innovative Inclusive Business models in this sector are increasing productivity and profitability, innovating solutions to farm-to-market infrastructure challenges, expanding support services and strengthening supply chains – offering farmers a dignified life beyond subsistence.

Much more can be done to capture the sustainable market opportunities outlined below. Investment in new technology, such as cold storage systems, can reduce this food waste, increasing farmer incomes and supporting the 14.2 million under-nourished people in the Philippines. New models of forest

¹² From Blended Finance team

protection and forest ecosystem services can restore land while creating new income streams for local communities. Upgrading technology in large scale farms, developing sustainable aquaculture models, guaranteeing food safety and scaling energy smart agriculture offer further attractive possibilities.

The UN Global Goals agenda proposes meeting these profound challenges by shifting the food and agriculture system onto a sustainable development pathway. This shift will be transformative and will have major impacts throughout the food and agriculture value chain, potentially producing a number of disruptive business opportunities worth more than US\$23 billion in the Philippines by 2030.^{viii}

Reducing food waste in the value chain (worth US\$6.9 billion per year by 2030)

Globally, 20–30 percent of food is wasted somewhere along the value chain between the grower and the consumer, even before allowing for food waste at the point of consumption. The majority of these losses occur in developing countries. The underlying causes of substantial post-harvest losses in value chains include limited information about feed production planning, pest infestations, and diseases; poor and inadequate infrastructure such as roads, water, power, and market facilities; a lack of dedicated food transport systems; and low-quality bulk packaging that results in spills and damage.

In the Philippines, up to 37 percent of cereals and up to 42 percent of fruits and vegetables are lost after harvest, with almost half of fruit and vegetable losses due to poor infrastructure. The International Rice Research Institute (IRRI) reports that rice losses reach around 15 percent in the post-harvest stage. In addition, an estimated 296,869 metric tonnes of rice, equivalent to PHP7.3 billion (US\$139 million), is wasted nationally, enough to feed more than 2 million Filipinos. Most storage facilities are poorly constructed and cannot guarantee protection against rodents, insects, birds and fungal infestations. Meanwhile, the Philippines remains a net importer of agro-foods, and the country's food demands are only increasing.

The government has prioritised food production and recognises inadequate post-harvest facilities as one of the major challenges. It has set a specific target to raise investments in R&D for production and post-harvest technologies.

There are a range of investment opportunities, from data systems to better manage production processes through to investment in cold storage facilities. Solutions to recover profits from these losses include using active intelligent packaging for perishables, optimising food packaging, and expanding secondary markets for food items with cosmetic damage. Basic technologies, such as plastic storage bags, small metal silos and plastic crates, can have a major impact through improved storage and transportation of food. Already deployed in the Philippines, the IRRI Super Bag is a farmer-friendly storage bag that allows cereal grains and other crops to be safely stored for extended storage periods – up to 5 years – by preventing wetting or drying of grain and control insect grain pests and fungal growth without the use of chemicals. It can also extend the germination life of seed for planting from 6 to 12 months. The IRRI Super Bag has improved the head rice recovery of stored grain typically by 10 percent and cut losses by 15 percent.

A significant opportunity higher up in the Philippines' food value chain lies in strengthening cold chain logistics, using increasingly clean and sustainable refrigeration technologies. A key challenge to scaling this opportunity is the high capital outlay required for cold chain systems, although partnerships between firms can make financing viable (see *Box xx. Winrock International*). Current cold chain technologies also risk adding to air pollution, so new technologies that reduce hydrofluorocarbon (HFC)

emissions in cold storage are crucial to preventing greenhouse gas production and protecting the ozone layer. Many food companies are already adopting more environmentally responsible measures that will increase demand for ozone-friendly refrigeration. Ecofrost, for example, is India's first on-farm solar powered cold storage. It is a portable, solar powered cold room solution that has the capacity of 5 metric tonnes and a backup capacity of 30 hours. It has led to over 40 percent increase in profits. Other companies, like Mumbai-based cold chain technology start-up TESSOL, have followed suit to develop solar-powered cold storage units. TESSOL has already implemented its fuel-free technology across poultry, horticulture, dairy and frozen food sectors with some of India's key stakeholders such as Godrej, Tyson, Abad Fisheries and Chitale.

- ✓ **Winrock International.** Philippines Cold Chain Project (PCCP) helps smallholder farmers and fisherman in Mindanao to ensure goods are fresh when they arrive at market. Caraga Region of northern Mindanao is the newest and second poorest region of the Philippines. Crops in the Philippines arrive at market in a condition consumers reject, making it a missed opportunity for the Philippines to reduce its food insecurity and increase the profits of its small farmers. Philippines Cold Chain Project helps farmers and fisherman in the island of Mindanao to produce high-value products consumers want. The project seeks to establish the cold chain infrastructure (a refrigerated supply chain) necessary to ensure products are fresh and appealing when they reach consumers. Facilitates and encourage production and post-harvest handling practices that reduce losses of perishable food products. U.S Department of Agriculture financed USD 17 million towards this project.

Low-income food markets (worth US\$4.6 billion per year by 2030)

The world's poorest people spend as much as 60 percent of their income on food. Despite this, calorie deficiency and malnourishment persist as populations cannot access to afford enough of the right kinds of food. Populations in South Asia face deficits of 300-500kCal per day. This problem is especially felt in the Philippines, where over a quarter of children aged 0-2 suffer from chronic malnutrition, the worst level in 10 years. The poorest sectors of the Philippine population consume an average of 22kg/year of vegetables per capita, approximately only 15% of the FAO recommended level of 146-182 kg/year. Food prices in the Philippines are high, and rice is particularly expensive. Poor Filipinos spend 41.5 percent of their earnings for food consumption on average, half of which is on rice.

Stronger private sector participation could enhance distribution systems and better ensure access for the poor. The development of low-income food markets will lead to increased employment in food processing, distribution and retail trade, and potentially some growth in agricultural workforces. Understanding local food demand patterns will overcome a key barrier to realising value from this consumer pool. For example, some populations in Asia continue to consume locally popular grains even though more calorie-efficient and cheaper grains such as millets may be available.

Consumer goods companies can play a role in addressing this gap by investing in supply chains and food innovation to make available food products that are more nutritious and accessible. If the SDG target of ending extreme poverty is met, an additional 800 million people could emerge as consumers globally

with incomes capable of addressing their food needs. The recognition of this market power by consumer goods companies will be a vital step in meeting the SDG target of ensuring universal access to “safe, nutritious, and sufficient” food.

Some companies have already stepped into the space. For example, DSM Nutritional Products has become a leader in the manufacture and supply of micronutrient blends for staples fortification, offering a complete portfolio of nutritional ingredients with high safety standards. In Costa Rica, the company started a nationwide fortification program in 2001, since which the prevalence of anaemia has decreased by more than 70 percent among children aged one to six years and by 54 percent in people living in rural areas. Cargill – which sells more than half a million tonnes of edible oil each year – has produced edible oils fortified with essential vitamins A, D and E for 30 million customers since 2008, through its Nourishing India initiative. The company’s US\$1 million annual investment into nutrient enrichment has improved the brand value, set a standard for competition, and made a difference in a sustainable and profitable way. Cargill’s initiative has also been a real catalyst for change in the industry; today, 60 percent of all edible oils sold in India are fortified.

Energy smart agriculture (worth US\$3.3 billion per year by 2030)

The food sector currently accounts for around 30 percent of the world’s total energy consumption and 20 percent of total greenhouse gas emissions. From this, primary farm and fishery production accounts for around one-fifth of the total food energy demand but produces two-thirds of the total greenhouse gas emissions. Lowering the energy inputs in essential areas, such as farm mechanisation, transport, heat, electricity, and fertiliser production, can help the food sector mitigate the risks from its reliance on fossil fuels – reducing cost and improving the sector’s environmental footprint. Furthermore, since wind, solar, hydro, geothermal, and biomass resources are often widely available on farms, there should be greater diversification towards renewable energy sources.

The Filipino Government is funding the adoption of technologies to enhance the capacity of small farmers and fisherfolk through the Smart Plant Production in Controlled Environments (SPICE) programme. This will support techniques such as vertical farming, micropropagation, cryopreservation and hydroponics will be practised, with the aim of developing technology to boost crop production and reduce the need for manual labour. The Department of Agriculture is also providing farmers’ training programmes about climate-smart practices, including the use of modern technology, and crop and soil management. The DOE will also support research and development on the expanded applications of liquefied petroleum gas (LPG) - a clean, lower carbon, efficient and innovative energy source - in several sectors, including agriculture.

Pursuing energy efficiency in the food sector’s production and manufacturing processes and diversifying towards renewable energy sources provides a large opportunity for Philippine companies. Private companies can lead the charge in their value chain. In India, the Aga Khan Rural Support Programme develops and scales innovations for farmers’ water management, for example drip irrigation and solar pumps. It is piloting a solar irrigation entrepreneurship approach in the Chakhaji village in Bihar, India by supporting young entrepreneurial farmers as Solar Irrigation Service Providers in overlapping command areas. As a result, it offers pump-less farmers irrigation services at affordable prices, generating full time jobs for entrepreneurs, increasing net incomes for farmer solar entrepreneurs and reducing CO2

emissions. Blended finance structure can also be deployed to support small-holders and capacity building operations. For example, the Global Agriculture and Food Security Program (GAFSP) Private Sector Window provides long-and short-term loans, credit guarantees and equity to support small-holders and small and medium enterprise (SME) farmers to help improve productivity growth. The IFC's Blended Climate Finance also catalyses investments in renewable energy, energy efficiency, climate-smart agriculture.

Forest ecosystem services (worth US\$2.9 billion per year by 2030)

Reducing deforestation and forest degradation will be critical to achieving the greenhouse gas abatement needed to avoid the worst impacts of climate change, boost the country's resilience to environmental catastrophes, and support post-disaster reconstruction. At present, deforestation and forest degradation account for 17 percent of global emissions, which is more than the transport sector.^{ix} The natural capital in forests is closely linked to the resilience of the food and agriculture system, since forests play a critical role in soil management, nutrient cycling, and water systems. Forests are effective contributors to disaster risk management, especially when combined with appropriate land-use planning, mitigation measures and infrastructure. They can provide protection, retain excess water, prevent extreme run-offs and damage from flooding, etc. The New Climate Economy has estimated that reduced deforestation and forest degradation can achieve a carbon abatement of 2.8–7.3 gigatonnes of CO₂ emissions by 2030.^x

The Philippines is losing approximately 47,000 hectares of forest cover every year, according to the data provided by the Forest Management Bureau of the Department of Environment and Natural Resources. The Philippines needs 54 percent of forest cover to protect against landslides and ensure water availability from watersheds, but the country is already down to less than 24 percent of the original forest cover in the 1900s. Around 1.2 million hectares of denuded and degraded forest lands of the country need to be rehabilitated by 2022.

As of December 2017, a total of 1.6 million hectares of forest lands have been rehabilitated under the government's National Greening Programme, which will continue through 2028. The country needs switch from timber harvesting and charcoal making, to sustainable practices in order to unlock business opportunities and reduce the consequences from deforestation.

There is a great business opportunity in sustainable forest management approaches that balance environmental, socio-cultural, and economic needs for forest products and services, combined with payment mechanisms for ecosystem services. Payments for ecosystem services (PES) include climate change mitigation, watershed services, and biodiversity conservation. PES will be essential for enabling private sector participation in this opportunity, particularly as many sustainable forestry approaches have long payback periods. In 2011, income from PES amounted to US\$2.5 billion globally.^{xi}

Commercial opportunities already exist in the Philippines to lower costs and reduce barriers, maximise revenue and carbon sequestration potential, and created integrated plays to support new value chains. Alternatively, public capital can be leveraged to enable restoration to become profitable, for example, through blended finance models. The Asian Development Bank has assisted the Philippines forestry sector through five forest development projects with a loan that totalled US\$311 million and technical assistance grants of US\$9 million.

REBUILD is the first large-scale sophisticated agroforestry solution that combines multiple species to create a steady revenue stream. It creates a renewable, regenerative and diversified revenue stream from ethanol, bio-pellets, biochar, cassava and a suite of other agro-forestry products. It has developed an integrated agroforestry technology systems approach to put together the most productive restoration recipes for different types of degraded and deforested land. It is creating a complete ecosystem that connects land owners and farmers with consumers of forests products, through an electronic market-based platform for demand aggregation, general feedstock supply to develop local solutions and monitoring of ecosystem services on an individual participant basis. It creates a model for enabling large scale, profitable reforestation efforts globally with a potential for replication across more than 800 million hectares globally. First pilot program is now being developed across 104,000 hectares of land in Indonesia, with an initial focus on bio-pellets, cassava and ethanol production from sugar palm.

'Forest, The New Economy' in Malaysia supports the whole value chain to make regenerative land projects commercially attractive. 'Forest the New Economy' aims to increase and promote investment in forests to develop innovative sustainable management practices of natural resources, emphasizing the importance of conservation and capitalising the true economic value of forests. Malaysian degraded forests can be supplemented by enrichment planting, and if executed with a commercial mindset, can have major positive cash flow benefits to the country. This venture has the capability of sequestering 5-10% of the required global CO2 mitigation needed by 2030 on an annual basis, in addition to increasing Malaysia's GDP by 3-10% and providing employment for 200,000 to 400,000 people. The desired course of action is to create a credible roadmap to bring Malaysia forward as the first carbon compliant and fully green economy.

Technology in large scale farms (worth US\$2.3 billion per year by 2030)

Large-scale farms account for an estimated 70 percent of global land under cultivation. Although large-scale farms have, on average, double the yields of equivalent smallholder farms, evidence shows there is still an opportunity to improve yields by a further 40 percent over the next 20 years.^{xii} Over 30 percent of farms in the Philippines are large scale. Even at high yields of crops, the Philippine cost of production is higher than other ASEAN^{xiii} countries due to low mechanization and the resulting high labour costs. Low yields affect competitiveness of agribusiness from farming, processing and exports. In the Philippines, only 57 percent of the 3 million hectares potential irrigable area was irrigated by 2015.

Technology can play a particularly important role in overcoming information gaps and supporting cost-effective business models that serve large-scale farms. Applications of technology associated with this opportunity include using big data techniques to optimise crop yield, fitting tractors with global positioning systems (GPS) and multispectral sensors (to allow precise application of nitrogen), farm-management software, drone technology and advanced robotics. The Department of Agriculture established the country's first solar-powered irrigation system, aiming to set up 170 units nationwide. It also began the use of drones to spray fertilizers and pesticides on a strawberry farm in Benguet. UK-based Bio Carbon Engineering also uses drone-enabled technology to plant seeds with speed and accuracy across diverse landscapes, including remote and challenging terrain. BCE solution plants 150

times faster and 4-10 times cheaper than current methods. Two operators equipped with 10 drones can plant 400,000 trees per day, and 400 teams could plant 10 billion trees each year.

The focus on sustainable farming techniques is also expected to generate a number of business opportunities for service providers in the agriculture sector. New techniques and technologies are already being used in the Philippines to transform formerly unusable and barren areas into productive lands, resulting in considerable growth in agricultural production.

Technical solutions can be in themselves commercially viable, for example Native's technology. Native, Brazil developed a new production and harvesting system called Ecosystem Revitalization Agriculture (ERA), applying the principles of regenerative agriculture in conjunction with technical innovation to replicate the resilient, regenerative ecosystem of uncultivated land. It developed its own harvesting equipment with low pressure tyres to avoid harmful compaction, that simultaneously cuts cane and shreds by-products returning them back to the soil, returning 20 tonnes/hectare of previously unused organic material to the soil each year, restoring nutrient loops. The farms saw a 20 percent productivity increase and a major cost reduction by producing 100 percent of energy needs through thermoelectric power plants run on sugarcane waste.

Critical barriers to sustainable land use investments relate to capital requirements and gaps in local financial systems to support investment in precision farming, lack of basic infrastructure connecting farmers to markets, and the need to manage potential negative environmental impacts from the use of fertilizers. However, innovative technologies and use-cases can be particularly attractive to impact driven private equity or venture capital investors looking to capture new economic value and unlock systemic change. Blended finance can be catalytic in supporting early-stage R&D, pilot development and testing through incubators and accelerators (e.g., Partnerships for Forests) and early seed capital before private capital can scale operations.

Box xx. Kenemer Foods

Smallholder farms are an important part of the global food chain. They cultivate about 30 percent of the global cropland and produce as much as 80 percent of the food consumed in emerging markets such as Southeast Asia.¹³ They are still operating at a low-income, subsistence level, and are vulnerable to ongoing environmental risk.¹⁴ Helping these farmers to raise yields is important not only for food production and environmental stewardship, but for tackling rural poverty.

Kenemer Foods International, Inc. (KFI) is a producer and marketer of food and agricultural products, specialising in the growing, sourcing and trading of high-quality agricultural crops, especially fermented cacao beans. The company is committed to rural development and inclusive growth in the communities where it works by promoting market transparency, providing fair value pricing for produce and implementing sustainable farming practices.

Based in the Philippines, where more than 6.9 million hectares have been distributed into three to five hectares to small-scale farmers, Kenemer has created an initiative to integrate 36,500

¹³ FAO, 2012. Smallholders and Family Farmers: Sustainability Pathways.

¹⁴ Quan, J., 2011. Science review: SR25, A future for small-scale farming.

smallholder farmers into their value chain by 2020. The company also provides intensive training to farmer entrepreneurs who become consolidators of beans under the Kenneker buying program, distributors of planting material and inputs and providers of pruning and rehabilitation support services, so-called 'cacao doctors.' It is estimated that by supporting the smallholder cocoa farmers in their production efforts, the company will help farmers increase their incomes by an estimated US\$3,600 per year. In addition, going forward, the company plans to train and certify 1,300 cacao doctors in the Philippines by 2020. Kenneker currently works with thousands of cacao growers in Mindanao, and parts of Visayas and aims to continuously increase this network.

Kenneker's programme encompasses the complete agricultural value chain where farmers are provided with high quality planting material and other inputs, technology and training in good cacao farming practices, on-going mentorship and supervision, post-harvest assistance, guaranteed buy-back of the harvest at prices linked to the world-price, and facilitation of access to financing. These are important assets to smallholder farmers who often lack access to credit and expertise. The Kenneker model of end-to-end support is designed to help farmers achieve high quality beans and high yields, enabling them to have sustained improvements in income and quality of life. Under the programme, smallholder farmers can experience a 4 time increase in yield, and the annual income of coconut farmers can expect a seven-fold increase. Kenneker enables farmers to have sustained improvements in income and quality of life, thus reducing poverty in some of the poorest areas in the country.

Sustainable aquaculture (worth US\$1.6 billion per year by 2030)

High-value aquaculture is a promising source of sustainable nutrition. Overfishing of wild caught fish combined with increasing demand for food mean that aquaculture is a growing industry, projected to almost double in size in the next 15 years.¹⁵ Global production of aquaculture totalled 52.8 million tonnes in 2008 and is projected to reach 93.6 million tonnes in 2030.¹⁶ The FAO estimates that more than 70 percent of production will come from the Asia Pacific. Southeast Asia is projected to produce around 16 percent of global aquaculture by 2030, with the top producing countries expected to be Indonesia, Vietnam, and the Philippines.¹⁷ Yet aquaculture is a relatively immature practice with a large scope for technological improvement. Compared to livestock production, the feed, disease control, waste management and other farming techniques are underdeveloped in aquaculture.

Aquaculture already contributes significantly to fish production currently in the Philippines, holding over 40 percent to the total value of fish production in 2017. The Philippines is among the top 10 producers of aquaculture in Asia, with an annual average growth of 10 percent. However, vast areas of marine waters are still under-utilized for aquaculture. In total about six million living in coastal regions are dependent on coastal and marine resources for sustenance. About 76 percent are estimated to be low-income households.

¹⁵ The World Bank, 2013. Fish to 2030: Prospects for Fisheries and Aquaculture.

¹⁶ The World Bank, 2013. Fish to 2030: Prospects for Fisheries and Aquaculture.

¹⁷ The World Bank Group, 2013. Fish to 2030: Prospects for Fisheries and Aquaculture.

A major constraint on the industry is pollution from excessive use of inputs and poor husbandry practices, which have contributed to severe production cutbacks in the Philippines.¹⁸ Fish farmers also face lower margins in part due to the prohibitive cost of feed and limited supply of locally available feedstock. The industry continues to be dependent upon the use of imported raw materials, such as soybean oil meal, and feed costs still comprise about 70 percent of the production cost.

Developing its aquaculture sector sustainably is critical to the Philippines; 90 percent of the fish caught in the Philippines remain in the local market, making up more than half of the animal protein consumed by the population. Overfishing is pervasive in the Philippines, where 70 percent of fish stocks for which there are data are considered overfished.

As part of efforts to develop sustainable coastal fisheries, the government implemented a seven-year project to improve coastal fishery resources in 68 municipalities for major commercial fisheries by 2022. The Philippines has begun implementing sustainable fishing reforms with the Environmental Defence Fund (EDF) as a partner providing critical support on science and policy. As part of the new fisheries law aimed at combating this problem, the Department of Agriculture-Bureau of Fisheries and Aquatic Resources (BFAR) has committed to building science-based policies and is partnering with EDF to develop new scientific processes, provide training, and test new technologies. The ADB provided US\$33.8 million loan to support the project that includes establishing coral reef areas and assisting fishermen to set up new fishing enterprises.

Business opportunities include developing lower-cost, plant-based fish feed that would reduce the feed conversion ratio and exploring new environmentally-friendly methods of land-based aquaculture (including cleaning systems that conserve water) to address some of the common problems like algae blooms and diseases that tend to spread quickly in poorly-managed offshore farms. Singapore's Temasek Life Sciences Laboratory (TLL) is developing a range of interventions to increase national fish production, including a recirculating closed loop urban aquaculture system – a multi-story urban fish farm - with Apollo Aquaculture Group. Another partnership with a new Centre of Innovation at Temasek Polytechnic and Allegro Aqua, aims to commercialise a new breed of sea bass product. Interventions are still in their infancy, but around 5,000 tonnes of fish are now produced in Singapore across 125 fish farms, including 7 land-based aquaculture facilities.

The increased productive capacity that will be enabled through technological improvements and improved waste management systems alone implies a US\$20 billion global supply opportunity. There is also strong potential for growth in the sustainable aquaculture market to accelerate as communities adopt more sustainable diets.

- ✓ **Rare Project.** Providing sustainable fisheries and behavioural change in the Philippines. The Philippines archipelago contains almost 10 percent of the world's coral reef; the centre of global coral ecosystem biodiversity. Climate change and overfishing has led to coral erosion and declining fish stocks, causing environmental damage and challenging livelihoods for the ~6 million small-scale fishers and their families rely on coastal waters for income and sustenance. Together with 37 local governments, Rare is helping local

¹⁸ Food and agriculture organization of the United Nations, 2009. Analysis of aquaculture development in Southeast Asia: A policy perspective.

conservation leaders establish managed access and no-take fishery zones, where fish stocks can recover while providing fishers with greater social and economic incentives to fish more sustainably. Rare is partnering with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), USAID, UNDP and GEF, through the country's Department of Environment and Natural Resources and Bloomberg Philanthropies through its Vibrant Oceans Initiative. The 'Fish Forever' programme has successfully changed behaviours at the community level towards conservation of coastal fisheries and produced replicable solutions in sustainable fisheries management. Fish Forever has implemented across 22 sites – after five years, it led to increases in fish biomass, and 15 percent increase in coral cover. Inspired the Meloy Fund – the world's first fisheries focused impact investment fund – mobilising \$22 million.

Food safety (worth US\$1 billion per year by 2030)

Foodborne illness is a major issue around the world as food products can be easily contaminated with pathogens in different stages of the supply chain. This, in turn, can lead to incidences of food poisoning, lost productivity, and even deaths. Based on 2010 data, the annual burden of food-borne diseases in the South-East Asia Region includes more than 150 million illnesses, 175,000 deaths, and 12 million DALYs (disability-adjusted life years). The impact of unsafe food costs low- and middle-income economies about US\$110 billion in lost productivity and medical expenses each year.

In the Philippines, there have been several large-scale food safety incidents such as the 2005 Mabini Town case, where 30 children died after eating food contaminated by pesticide, and the 2015 mass food poisoning where over 1,900 people fell sick after consuming sweets made from durian. Yet a large proportion of these costs could be avoided by adopting preventative measures that improve how food is handled from farm to fork. Due to poor compliance with quality standards along the supply chain, the Philippines has experienced agri-food rejections at the border of importing countries, such as Japan, Australia, the United States and the European Union. Local challenges are a lack of awareness on food safety issues and protocols, unclear enforcement mandates leading to inefficient control structures, and difficulties to trace along supply chains with numerous intermediaries.

Philippine authorities have stepped up efforts including forming expert panels and implementing new laws such as Food Safety Act of 2013, which aims to strengthen the food safety regulatory system, and Republic Act 9296 National Meat Inspection Code to harmonize meat inspection laws with international standards. The Department of Trade and Industry is expanding its outreach on food safety, running publicity campaigns and workshops to boost standards so Filipino producers can take advantage of key export markets.

Food safety testing shows a crucial business opportunity. The food safety diagnostic market has seen growth over recent years as food companies and regulators invest in food safety testing equipment and services to reduce the incidences of foodborne illness.

There are other significant opportunities for food security and technology companies to provide anti-fraud solutions to ensure a clear, traceable provenance of food product; the cost of food fraud is estimated to be between US\$95 billion and US\$156 billion globally in 2030. The global food safety testing market estimated to be worth between US\$14.8 billion and US\$28.9 billion in 2030. Private

companies have opportunities to invest in supply chain traceability and security to meet the required standards, innovative tech-enabled start-ups can also invest to bypass the difficulties of documenting a fragmented supply chain. For instance, Arc-Net, a Northern Irish technology firm, is creating a blockchain technology to enhance the traceability and authentication of food. Similarly, in China, ZhongAn Technology in 2017 launched the GoGo Chicken initiative, which marries free-range poultry with high-tech surveillance. Each bird wears an ankle bracelet that tracks the chicken's age, daily step count and time of death, which allows consumers to see the source of their food. More than 400 farms across China are now part of the GoGo Chicken initiative, and the company is expected to recruit 3,000 farms by 2020.

Energy and materials

As demand for energy in the Philippines is forecast to increase by 2.5 times by 2040, and with around 10 percent of the population still without access to electricity, there is an imperative and a sizeable opportunity in both improving energy efficiency and expanding energy access. The energy sector attracted 42 percent of the FDI inflows in 2017. However, the country still has some of the most expensive energy prices in the region and is heavily reliant on fossil fuels, with 54 percent of GHG emissions comes from the energy sector.

The Philippines must aim to embrace the energy transition and explore opportunities to switch to renewable sources of energy generation as quickly as possible. The Philippines' Clean Energy Plan targets tripling the national renewable energy generation capacity from 5,438 MW to 15,304MW by 2030. According to the Department of Energy, an estimated US\$600 million in investments are needed to achieve Philippine energy efficiency targets for year 2020, as well as US\$34 billion to meet the country's 2030 targets for renewable energy installation. Thus far, the country has not seen major change in their GHG emissions to date and faces challenges of foreign ownership, permitting, grid connection and Feed-In-Tariffs. According to the Energy Transitions Commission Report *Mission Possible*, the routes to decarbonize the economy need to consider the decarbonization of power, heavy industry and transport simultaneously.

The Philippines manufacturing sector also grew at a fast rate on strong export sales, attracting 35 percent of the FDI inflows in the same year. The manufacturing sector hosted the highest labour productivity growth in the Philippines over the past 20 years, outpacing some regional peers. This acceleration reflected a transition from textiles, apparel, and paper products to more skill-intensive products such as electronic components and transport equipment. Offshore sales of electronics, mineral products and machineries made big gains. Strengthening value chains and integrating industries are key government focus areas, with automotive and electricals priority sectors.

Solid waste management remains a major challenge in the Philippines, especially in urban areas like Metro Manila. Cities face improper wastes disposal, inefficient wastes collection and lack of disposal facilities, increasing the cost for governments and consuming valuable land resources. The emphasis on adopting sustainable patterns of production that reduce waste and improve energy and resource efficiency – as set out in the Global Goals – will transform manufacturing processes. These trends also open up opportunities to scale 'circular' business models in the automotive, appliance, electronics, and plastic packaging industries – thereby reducing energy consumption and upcycling waste to create new

value streams. Extended producer responsibility regulations are becoming more widespread, requiring manufacturers to better handle the waste generated from their products. Low-visibility supply chains will be replaced by more traceable systems that encourage sustainability reporting. Advanced lightweight and high-strength materials will improve production efficiency, reducing waste and energy use.

The UN's Global Goals agenda proposes meeting these challenges by shifting energy and materials onto a sustainable development pathway. This shift will be transformative and will have major impacts throughout the energy and materials value chains. It could lead to the emergence of disruptive business opportunities worth US\$19 billion in the Philippines by 2030.

Circular economy (worth US\$8.1 billion per year by 2030)

A circular economy is an alternative to a traditional linear economy, which entails gradually decoupling economic activity from the consumption of finite sources. It is based on three key principles: i) designing out waste and pollution; ii) keeping products and materials in use; and iii) regenerating natural systems. In the Philippines, recyclable waste accounts for 28 percent of the country's solid waste in 2015, signifying great potential for recycling to reduce solid waste, if Filipino companies focussed on circular supply chains that increase recycling, reuse, and remanufacture. There are particularly large opportunities to advance circular systems in automotive, appliance, electronics, and plastics.

Circular business models based on recycling and remanufacturing may displace linear models, driving changes in product design and value chains. The automotive sector will be particularly affected. The Philippine automotive manufacturing industry intends to achieve a 150 percent increase in nationwide capacity by 2022. There are currently fifteen vehicle manufacturers with operating plants in the country, seven of which are equipped with electro-deposition painting systems. There are a total of 272 parts and components manufacturers in the country. Collection rates for vehicles at end-of-life are generally very high – in the EU, for example, they exceed 70 percent. Autocraft Drivetrain Solutions in the United Kingdom provides remanufacturing services on a wide range of engines and components for the automotive industry. Autocraft recovers up to 85 percent of the core engine through innovative methods, working in partnership with OEMs when they design new engines, to design with remanufacturing in mind and recover components.

However, most collected vehicles are recycled into base materials, which is energy-intensive and results in loss of value. Given only a small number of “weakest-link” components are typically responsible for the vehicle's end-of-life, it is possible to significantly extend useful life by increasing rates of refurbishment and remanufacture. This increases the efficiency of material and energy use, and better retains the residual value of the vehicles. Guangzhou Huadu in China has partnered with retailers 4S to collect vehicle parts, remanufacturing into spare parts, conserving the value of machine products and components and returning them to re-usable condition. This has up to 60 percent savings in material and energy, creating a 50 percent cheaper product. Shifting to a circular model in automotive requires designs to need to better prepare vehicles for disassembly, and capital investment will be required to establish centralised refurbishment plants. Consumers may also resist purchasing refurbished vehicles, though warranties should partly assuage their concerns.

Many domestic appliances and industrial machinery are well-suited to circular models. They are subject to technological innovation and contain multiple parts that can be disassembled and reused. Collection

rates at present are lower than for vehicles – generally below 50 percent – so the opportunity to capture more material for recycling and refurbishment from appliances and machinery is high. A washing machine, for example, typically contains 30 kilogrammes to 40 kilogrammes of steel – a refurbished machine could reduce material input costs by 60 percent. To ensure that collection and refurbishment capture as much value as possible, business models may need to shift from purchasing to leasing or performance-based arrangements. This will also encourage manufacturers to design products with lower obsolescence risk. Caterpillar has placed a strong emphasis on component recovery when designing and considering the remanufacturing of its heavy machinery. The company has been able to increase profit margin while still producing high-quality components by replacing products before they break and rebuilding them with a mixture of new and used parts. When the component is recovered this material can be removed and replaced to return the engine to as-new performance. This has led to a 50-60 percent reduction of costs.

Electronic devices and gadgets also offer large potential for increased circularity, with huge volumes and large numbers of parts that can be reused and refurbished. For example, annual shipments of smartphones now exceed 1.4 billion devices per annum. The electronics industry has been considered as the driver of growth for the Philippine manufacturing sector in recent years. Secondary markets involving a degree of refurbishment are already established, but collection rates are generally 15 percent or less, and there were still 3 million tonnes of small IT e-waste globally in 2014. While some countries have regulated e-waste systems, industry-wide collection and treatment systems need further development. To further sustainable circularity, manufacturers will also need to move from highly integrated product designs to more standardised and modular component design. Brazilian-based company eStocks collects products returned by local customers, replacing the original manufacturer as the default option. Of the products recovered, 50-55 percent are refurbished, 20-25 percent are repaired and re-sold, and the remaining 10-15 percent are dismantled into parts and used elsewhere. The company has its own retail outlet selling electronic products at more affordable prices, opening up the technology market to lower-income consumers. Refurbished products generate 6 times more value than recycled ones and logistics cost are reduced by up to 65 percent.

Finally, plastics. Over 95 percent of the economic value of plastic packaging is lost, with only 15 percent of produced material collected for recycling, and a recycling value yield of only 30 percent. The plastic packaging economy is meanwhile expected to double in value by 2030.¹⁹ The Philippines wastes 6,876 tonnes of plastic per day, of which 81 percent is mismanaged. A third of produced plastic lost to pollution in ocean and land ecosystems, and just under half placed in landfills. The Philippines is the world's third-largest ocean polluter; generating 2.7 million tonnes of plastic waste annually 20 percent of which leaks into the oceans. Plastic pollution has been choking waterways across the Philippines and worsens disaster, particularly during rainy season. The Typhoon Ondoy in 2009 clearly showed that plastic bags severely worsened the flooding in Metro Manila and made post-clean-up more difficult. There are ample opportunities to increase the amount of plastic material that is recycled across the country. Companies can also reduce plastic waste by shifting to innovative and ecological ways to distribute their products. Project STOP is a partnership between corporates like Veolia and Borealis, DFIs funders, local communities, and regional government to create a local circular plastic economy and Indonesia's first zero-leakage community of Muncar in East Java. Replenish created a customisable

¹⁹ *The New Plastics Economy: Rethinking the future of plastics*, Ellen Macarthur Foundation, January 2016.

packaging platform for liquids with a reusable bottle that attaches directly to a concentrate refill pod. The refill system reduces energy, plastic waste and Co2 emission by 80-90 percent compared to standard products.

Energy access (worth US\$4.5 billion per year by 2030)

An estimated 274 million households do not have access to modern lighting and electricity, and more than 426 million without modern cooking fuel. In the Philippines, more than 2 million households – or about 10 percent of all households – lack electricity, and about three quarters of which are in remote rural locations. The Philippines' power rates are among the highest in the region due to absence of government subsidies, limited fuel (energy) production, Feed-in-Tariff rates that are more expensive than the generation rates of other energy sources, and loss in electricity as it is transmitted and distributed, which translate into added cost for the distribution utilities.

The government aims to expand energy access to achieve 100 percent electrification of targeted identified unelectrified households in all three major islands by 2022, under the Philippine Energy Plan 2017-2040. It has prioritised provision of electricity services to the remaining unelectrified off-grid, island, remote, and last-mile communities.

Providing universal access to modern energy by 2030 may require annual investments of over US\$40 billion on various technologies.²⁰ The International Finance Corporation (IFC) estimates that even without major investments in grid infrastructure, energy access could be significantly improved through low-cost household products, such as solar lanterns and improved cookstoves, and community-level mini-utilities. Nationally Appropriate Mitigation Actions (NAMA) are concrete projects, policies, and or/programmes that shift a technology or sector in a country onto a low-carbon development trajectory. In the Philippines, the NAMA Facility finances measures that shift sectors towards a sustainable pathways, and it worked with the Philippine Department of Energy to develop EUR 20 million program that will accelerate the uptake of rooftop solar PV installations by residential, commercial, industrial and government facilities under the country's regulations. Phoenix Solar Pte Ltd. provides off-grid solutions to rural villages and industrial applications such as lighthouses in remote locations across Asia. These products need to be sold through financing arrangements that recognise the circumstances of the poor. In Bangladesh, for example, Grameen Shakti provides large-scale home solar installations for a small upfront cost, then monthly payments over three years.

- ✓ **Davao Light and Power Company.** Third largest privately-owned electric utility in the Philippines provides power for over 1.8 million residents of Mindanao. Mindanao has experienced power shortages since the 1990s. The isolation of the island's grid from the rest of the country and unbalanced generation capacity cause continuous blackout, which hampers the district's economic development. The Mindanao Development Authority actively supports the deployment of renewable energy sources in the island. Therefore, the Aboitiz Group and Davao Light have successfully leveraged these opportunities to build a geothermal and solar portfolio that expands Mindanao resident'

²⁰ *Access to modern energy: Assessment and Outlook for Developing and Emerging Regions*, IIASA, UNIDO & GEF, 2012.

access to reliable and clean energy. Davao Lights' customers consume 200 kilowatts or less per month and pay less for electricity than higher-income families. 17 percent of the company's service locations are not connected to the grid. Therefore, a solar charging station project was launched in off-grid areas. There are 10 charging stations servicing 303 households in Davao City.

- ✓ **Reiner Lemoine Institut (RLI).** In rural areas like the smaller islands of the Philippines, generators powered by diesel oil continue to be the dominant technology for off-grid systems. But they are dogged by problems with fuel security and volatility in oil prices. Supply of energy on such islands ranges from four to eight hours daily. To help island communities access more stable supplies of electricity, researchers from the Reiner Lemoine Institut (RLI) looked at introducing renewable energy (solar and wind power) into their energy systems. Some 193 islands with a population of 1,000 to 100,000 were chosen for the study. It found that adding batteries into their systems increased the share of renewable energy in the system to an average 81 percent, from 34 percent without batteries. Solar emerged from the study as a clear winner over wind power for these islands on efficiency, cost-effectiveness and reliability.²¹
- ✓ **Manila Electric Co. (Meralco).** is the biggest power distributor in the Philippines, holds a congressional franchise to own, operate, and maintain a power distribution system in the Philippines. It offers power to approximately 6.3 million industrial, commercial, and residential customers in 36 cities and 75 municipalities, including Metro Manila. Meralco is exploring the use of blockchain and artificial intelligence (AI) as it continues to disrupt its traditional distribution business to eventually become an internet company with a power business. Blockchain is a digital ledger where transactions and data are shared by a network of computers. This could allow peer-to-peer trading of energy, where instead of selling excess power to the grid and buying it back, they can sell it directly to their neighbour.

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Energy efficiency in non-energy intensive industries (worth US\$1.9 billion per year by 2030)

While significant improvements in energy efficiency have been achieved in energy-intensive industries, there has been less progress in non-energy intensive industries. Energy has a smaller share of production costs, and so both awareness and the incentives to invest in efficiency measures are lower. This is particularly true in small and medium-sized enterprises (SMEs).

The International Energy Agency estimates that additional opportunity in non-energy intensive industries could reduce final energy consumption by more than 3 percent in 2030. McKinsey Global Institute estimates the energy-efficiency opportunity in non-energy intensive industries, based on a variety of levers, to be US\$224 billion in 2030. However, awareness and technical capabilities, as well as capital investment requirements, remain real barriers. However, blended finance can support a transition to energy efficiency. For example, the IFC, along with Global Environment Facility's support,

²¹ Reiner Lemoine Institute, 2014. Energy storage increases access to electricity in Asia.

launched an energy efficiency credit line called the China Utility focused Energy Efficiency Program (CHUEE), which helped local commercial banks extend loans for energy efficiency upgrades.

In the case of the Philippines, there is potential for improvement. According to the World Bank's 'Regulator Indicators for Sustainable Energy', the Philippines scored 61st out of 100 countries. The report found that the Philippines lacks legislation or a national action plan that aims to increase energy efficiency, financing mechanisms, performance standards and building codes.

The Philippine Energy Plan 2017-2040 aims to promote a low carbon future, including promoting clean, efficiency and smart energy technologies. Initiatives have also been seen in the private sector. The Efficient Lighting Initiative (ELI) implemented by the IFC between 1999 and 2003, and seeded by a \$15 million investment from the Global Environmental Facility, was a market experiment that engaged multiple actors to promote efficient lighting in multiple countries. ELI built coalitions of regulators, lighting manufacturers and electric utilities to build consensus for efficient lighting as a strategy to manage electricity demand and expand provision of modern electricity services across the Philippines. Manufacturers improved the quality of their efficient lighting products to meet ELI specifications, and MERALCO has already committed to developing a "Smartlight" CFL program that will cover three million residential customers in Metropolitan Manila. Potential energy savings could amount to 62 terawatt hours per year, amounting to 24,000,000 tonnes of CO2 per year, with an aggregated value of US\$120 million at the current price of US\$5 per tonne.

Between 2015 to 2016, India-based Dalmia Cement adopted the latest technologies to implement international energy management standards for the industry – in particular by increasing the use of 'blended' cement, hence optimizing the clinker-to-cement ratio, and thereby reducing energy intensity. It was able to reduce CO2 emissions to 526kg/t cement produced as a group average and 342kg/t in its most efficient operations (in comparison to a global average of 900kg/t). This created co-benefits as using industrial waste products (as blast furnace slag from the steel industry and fly ash from thermal power plants) extends the lifespan of cement. The company's earnings went up by 70 percent and costs were cut by 27 percent. At the Global Climate Action Summit in September 2018, Dalmia Cement announced its long-term vision of becoming carbon-negative by 2040.

Health and well-being

Although the Filipino healthcare system is generally of a high standard, there are large disparities in the provision of healthcare services in the Philippines across gender, socio-economic demographics and along geographies. The health sector in the Philippines also faces several challenges and opportunities related to research and development; inputs and devices; primary and secondary care; and lifestyle management – exacerbated by the growing middle class. Overall, the healthcare system in the Philippines is of a high standard given that medical staff are expertly trained, but the quality of the Philippines' state-subsidised healthcare varies widely between rural and urban areas, incomes and genders.

Overall, healthcare spending per head in the Philippines is low, at an estimated US\$140 in 2017, placing the country well below spending in Singapore, Malaysia and Thailand. In addition, income inequality and

the geographic fragmentation of the country's 7,000 plus islands have meant that access to health care is far from universal; 8 out of 10 Filipinos have never had a physical or medical check-up in their life. Disparities in the use of essential services based on education also remain large. For example, the immunisation coverage of children whose mother has high education compared to no education rises by over 50 percent. Access to skilled birth attendants differs by more than five-fold between mothers of the lowest education level versus mothers of the highest levels.

There is also a large gender gap in healthcare services. More than three women in four with the lowest household income reported difficulties in accessing healthcare due to financial reasons, and 28 percent of women give birth without a trained practitioner in attendance.

Additionally, the country's expanding middle class means more care is needed for the long-term health conditions linked to higher consumption and more sedentary lives. As a side effect of Philippines' increased affluence, inactive lifestyles are becoming more prevalent, which leads to chronic diseases. Technology enabled health solutions, like remote patient monitoring, can bridge unequal access to care and help to meet the increasing demands.

In addition to health risks, Filipinos face acute climate risk, which impacts their overall state of well-being. Of the world's most at risk cities, 21 are in the Philippines. Between 2006 and 2013, the Philippines experienced 75 natural disasters, mostly typhoons, tropical storms and floods that cost US\$3.8 billion in damages and losses.²² Despite these risks, insurance penetration is low. Only 16 percent of middle- and upper-income Filipinos are insured, and nationally, this figure drops to 1 percent. Risk pooling and extending insurance coverage for both climate and health-related risk is therefore a significant business opportunity in the Philippines.

The Global Goals agenda proposes meeting these profound challenges by shifting health and well-being onto a sustainable development pathway. This shift will be transformative throughout the value chain, and could lead to the emergence of a number of disruptive business opportunities, worth US\$16 billion for the Philippines in 2030.^{xiv}

Risk pooling (worth US\$9.2 billion per year by 2030)

Insurance is a measure of economic growth; as income grows, the more the population sees a need for insurance products. In the Philippines, the insurance penetration rate – defined as the percentage of insurance premiums to GDP - is estimated to be 0.5-0.6% percent, which is low in comparison to Asia's developed countries with an average insurance penetration level of 2.4% (which is more comparable to Western European rates). Although institutions such as the Social Security System and the Government Service Insurance System (GSIS) provide insurance for its members against hazards of old age, disability, and death, enrolment rate remains low among those in the informal sector. Nevertheless, in low insurance penetration lies opportunity for the market to grow and the country to develop.

Microinsurance is a nascent business model gaining momentum across developing countries due to the large untapped market. More specifically health insurance coverage increased by 20.2 percent between 2011 and mid-2015, from 52.6 percent to 63.2 percent of households. This was partially due to the

²² From Blended Finance team

effect of microfinance institutions. Health microinsurance schemes (HMIS) are considered promising alternatives to help the informal sector across between quality healthcare by bringing affordable insurance to previously unreachable groups through micropayment options. In the Philippines, CARD MRI is leading microfinance through its CARD MBA, and also provides life insurance through CaMIA. As of January 2019, the number of clients it served reached nearly 1.9 million while the number of loans disbursed amounted to US\$ 46.5 million.

Risk pooling has expanded from health to climate risk. In the Philippines, adequate private and public insurance mechanisms are not well developed, where extreme climate events have led to recurring climate-related disasters, costing the nation's agricultural sector billions of dollars. The number of people killed or affected by natural disasters has increased rapidly and continues to accelerate. This has presented an opportunity which companies are already engaging with. The Caribbean Catastrophe Risk Insurance Facility (CCRIF) is the first multi-country risk pool for countries and island states in the Caribbean to limit the financial impact of natural disasters by providing financial liquidity. Since the inception of CCRIF in 2007, the facility has made 38 pay-outs to 13 member governments on their tropical cyclone, earthquake and excess rainfall policies totalling almost US\$139 million. In the Philippines, Cropital facilitates lending and crop insurance for weather risks for Filipino farmers, and the Philippines People Survival Fund (PSF) supports funding for early warning systems for climate-related hazards.

Private sector firms have devised innovative digital payment methods to spur higher levels of risk pooling (see *Box xx. Digital financial inclusion*). Blended finance structures are developing innovative climate-related insurance regimes for the Philippines, such as the Philippine City Disaster Insurance Pool (PCDIP) – a partnership between the Philippines Department of Finance and the ADB with support from private market catastrophe risk expert Risk Management Solutions (RMS), experts from the Earthquake and Megacities Initiative, economists from Vivid Economics and insurance or reinsurance brokers from Willis Towers Watson.

The proposed PCDIP risk pooling facility would enable Philippine cities to purchase disaster insurance protection for typhoon and earthquake risks, with flood also expected to be targeted in future. It would pool the risks from member cities and approach the reinsurance and capital markets for the capacity to underpin the risks it holds, enabling the cities to benefit from economies of scale, diversification within the risk pool and, as a result, more favourable reinsurance pricing. The PCDIP facility would use instruments including catastrophe bonds mooted, in order to capitalise on appetite for risk and to deliver the most efficient insurance capacity to the participating Philippine cities.^{xv}

Another blended finance model used to pool risk and extend disaster protection in the Philippines is the World Bank's sovereign catastrophe bond. The insurance-linked securities (ILS) investment fund manager Nephila Capital and Swedish state sector pension fund AP3 both participated in the recent US\$390 million renewal – almost double the US\$206 million of cover provided the prior year – for the Philippines regional parametric disaster insurance program, joined by twice as many reinsurance firms to provide capacity to back the renewal of the natural disaster cover, including Munich Re, Swiss Re, AXA, Hannover Re, Hiscox Re, Allianz, and SCOR.

(For more examples of blended finance models, see Section 4.2 Mobilise blended finance.)

- ✓ **Cebuana Lhuillier Insurance Solutions.** Offers affordable, accessible and innovative insurance products and services to under-served Filipinos. Given that the Philippines experiences an average of 20 typhoons and other natural disasters per year, the creation of a suitable insurance product for the poorest populations is challenging. Intervention: Cebuana Lhuillier Insurance Solutions (CLIS) the micro-insurance arm of Cebuana Lhuillier, has developed microinsurance products that are affordable and accessible for low- and middle-income Filipinos. CLIS offers over 15 individual and group insurance products that target the needs of the low-income communities while considering their payment capacity. For US\$2.40 per year, claimants can be covered for as much as US\$600. In light of the growing mobile-connected population, CLIS developed the MicroPinoy app for customers to receive microinsurance products. Given the importance of a convenient claims procedure in disaster-stricken areas, CLIS focuses on rapid claims, where the employees are dispatched within 24 hours of a disaster to handle customers claims. CLIS has covered over 7 million Filipinos and paid PHP 170 million (USD 3.4 million) in client's claims since 2004.

- ✓ **Pioneer Insurance.** Pioneer is in the development of microinsurance in the Philippines since 2007. 2008 was the first full year of operation in microinsurance, generating a total of nearly 29,000 enrolments, while in 2016 they were over 18 million. Expertise in both life and non-life insurance enables them to create products and packages that protect Filipinos against losses that affect them. To support the marginalized sector, they created products that cover health insurance, personal accidents, property assistance in case of loss or damage, crop insurance in case of loss of crops caused by natural disasters. Example: in October 2015 a 7.2 magnitude earthquake hits Bohol, a week later the Pioneer team visited Bohol to validate the claims of the product that the company underwrites. In one day they handled over 200 claims, which allowed them to provide property assistance claims on a short time span. Over 2,000 claims were processed and 6M pesos were paid out. In 2013 typhoon Yolanda caused devastation and deaths particularly in the areas of Samar and Leyte. Over 20,000 claims were processed and 100M pesos were paid out to the people affected by the typhoon.

Box xx. Digital financial inclusion

According to the World Bank, financial inclusion in ASEAN is approximately 50 percent of the population – much lower than the Asia-Pacific average of 70 percent. In the Philippines, only 42 percent of Filipinos have financial account ownership. There is significant variation in financial inclusion across regions and along the rural-urban lines within the Philippines: 70 percent of the surveyed adults report using a formal financial product compared to 47 percent of their rural counterparts.

Innovative financial services, like digital payments, are a key enabler to address this and improve the number of banked people in cities. These payment instruments have lower barriers to adoption and usage and could enable city populations to access a range of financial services

beyond simple savings, like credit, insurance, and remittance which has the potential to considerably improve the overall quality of life. Financial services delivered digitally are also powerful tools to empower women and marginalised groups – who disproportionately lack access to formal finance globally. For example, digital transactions have been shown to support remittances, of which 60 percent of recipients are women.

Based on 2014 estimates, micro, small, and medium enterprises (MSMEs) and individuals in emerging South East Asia, had the opportunity to obtain US\$295 billion in new loans from leveraging digital financial services. McKinsey Global Institute (MGI) estimates that digital finance could boost annual GDP of emerging markets by US\$3.7 trillion by 2025. Leakages in public spending and payment collection emerging South East Asia could be reduced by an additional US\$10 billion.

A survey shows that 46 percent of respondents in Asia-Pacific use their mobile devices, mainly with mobile apps, to purchase products and services online, higher than in Europe (32 percent) and North America (28 percent). In the Philippines, 25 percent of those with a formal bank account have made or received digital payments, though cash on delivery still remains the predominant payment method. Mobile financial services (MFS) have found relative success in the Philippines with 17 percent of adults reporting current use of an MFS product. In 2015, for every 100 people, there were nearly 120 mobile phone subscriptions, with an average annual growth of over 20 percent. In 2017, the smartphone penetration rate was about 43 percent. The number of mobile-phone subscribers in the country is expected to rise by an average of 3 percent annually during 2017-21. However, MFS are still used disproportionately by the wealthy. Approximately 28 percent of adults in the highest income quartile report currently using a mobile financial service, as compared to 6 percent of those in the lowest income quartile.

Financial inclusion could facilitate risk pooling and extending health and climate coverage to citizens, as well as support sustainable aquaculture and forest ecosystem services respectively by facilitating transfers of income to fishers and farmers. There is a tremendous market opportunity to provide digital financial services, a current 17 percent annual growth market (second only to Vietnam in the region). Finland-based e-commerce network Tapp Commerce created a mobile marketplace application that allows unbanked customers to purchase goods online, pay tuition fees, top up mobile credit and pay for electricity, water bills and other services using cash through trusted local shopkeepers. Tapp Commerce has reached 1 million consumers in the Philippines, where its revenue is derived from high sales volume.

Digital finance is gaining traction across Asia, as more companies and government players use web-based financial technology to expand financial services offerings for lower-income households. For example, in the Philippines, the Central Bank has teamed up with mobile providers to offer mobile money services to over 50 million clients. Digitising government payments in the Philippines could reduce the share of unbanked adults by up to 16 percent and the share of unbanked women by up to 20 percent, while the Asian Development Bank (ADB) predicts that digitally driven acceleration in financial inclusion could boost GDP by 3 percent in the Philippines.

Building an e-payment system requires intensive resources in terms of capital, technology and people. Achieving goals for this sector will require efforts by policy makers on improving connectivity, addressing constraints related to skills and human capital development, ensuring digital security and consumer protection. The government has just approved a national broadband upgrade under the PDP, which should provide the enabling environment to scale digital banking operations. The government is also setting the foundation of a digital ecosystem through legislative measures such as the biometric national ID bill and Payment Systems Act. These measures would support the opening of digital mobile money accounts for the poor. The PDP 2017-2022 aims to enhance technology adoption by strengthening the effectiveness of financial inclusion initiatives through the efficient delivery of microfinance and micro-insurance products and services for Filipinos including those who live abroad, expanding the deployment of ICT infrastructure and address the gaps in digital connectivity, continuing to enhance the country's e-government system as a vital tool for good governance, and assisting couples through financial inclusion programs to encourage savings.

- ✓ **Ayannah.** Provides affordable and accessible digital financial services for international and domestic migrants. Migrants make up more than 50 percent of the Philippines' population and remit large sums of money to their families in the country. In 2016, the World Bank estimated that the 12 million overseas Filipino workers remitted US\$29.1 billion. Because most Filipino migrants and their families remain unbanked, they prefer to receive remittances in cash, but large remittance flows coupled with a large unbanked population often result in remittance centres running out of cash and fees as high as 12 percent. Ayannah developed the Sendah Remit software, which connects remittance centres, pawnshops and couriers. It allows recipients to receive cash at any collection point that has cash available. By maximizing liquidity available in the network, Ayannah hopes to lower interest rates for remittance transactions

Remote patient monitoring (worth US\$1.5 billion per year by 2030)

The ADB projects Asia's elderly population could reach 923 million by 2050.²³ Ageing populations place increasing pressures on healthcare systems, on both their physical infrastructure and human capital. Equally, the geography of the Philippines, being comprised of more than 7,000 islands, makes it difficult to deliver healthcare services to remote areas. Social, economic and geographical barriers often lead to variations in access to services, which eventually result in inequity in health outcomes. The disadvantaged subset of the population is often located in remote and hard-to-reach areas, rendering it difficult to access health care when they need it. Thus, the imperative to lower healthcare costs and build sustainable health systems with comprehensive geographic and demographic-economic coverage is increasing the demand for remote monitoring systems..

²³ ADB., 2017. "Population and Aging in Asia: The Growing Elderly Population", Asian Development Bank, 18 January.

Alternative solutions that incorporate home-based healthcare may present opportunities for care providers, nursing homes, and medical equipment suppliers, by providing products that can affordably meet the population's needs. Using sensors that read the vital signs of patients at home, nurses and doctors can be alerted to problems before they worsen. Israeli-based company Healthymize created technology that turns smartphones, tablets, smart watches, and virtual home assistants into continuous health-monitoring devices. By analysing the human voice and breath during regular phone calls or other interactions with these devices, the artificial intelligence-based technology monitors voice-affecting conditions such as asthma, chronic obstructive pulmonary disease (COPD), heart failure, and mental diseases. McKinsey Global Institute estimates that remote monitoring could reduce the cost of treating chronic diseases in health systems by 10 percent to 20 percent by lowering the frequency of emergency room visits and unnecessary hospitalisation.

This opportunity has important potential applications in the Philippines, allowing better management of patients in remote areas with low access to care. SmartSole footwear devices, for example, grant healthcare providers 24/7 access to in-depth, real-time health updates concerning the patient's posture. Unit shipments of health monitoring technologies such as SmartSole will rise to more than 6 billion in 2021, up from 300,000 in 2016.

Some of the barriers include managing patient acceptance of this new form of health delivery and privacy issues, given the risk that the data collected via health monitoring could be abused.

While demand for remote patient monitoring is rising quickly, there has been no consensus on the ideal business model. This leaves an opening for entrepreneurial vendors to gain the first-mover advantage in a competitive market.^{xvi} An already common model is for vendors to form partnerships with stakeholders such as hospitals, governments, telecommunication companies, and insurance providers. For example, insurance companies are willing to provide remote monitoring devices and services to reduce the probability of hospitalisation claims.^{xvii}

[Progress on all the Global Goals is needed to deliver all the benefits](#)

The Global Goals are highly integrated, which means progress on all of them is needed to open up all the business benefits they offer, as well as the overall societal gains. For instance, the research shows that effective action on climate change can be linked to achieving the objectives of strong economic growth and ending poverty, while access to affordable energy will help reduce inequality and support sustainable industrialisation in the developing world. At the same time, major investments in infrastructure and innovation will be needed to meet the environmental targets set in the Global Goals.

Links between the social and environmental goals are also marked: sustainable management of land and water ecosystems will help improve agricultural productivity and eliminate hunger and malnutrition, while climate action, better housing and less polluted cities will have widespread benefits for health and well-being.^{xviii} Progress on the education goal is linked to improvement on more goals than any other.

Achieving the Global Goals will certainly require new regulations and a broadly supportive enabling environment. These are likely to include measures to address greenhouse gas emissions and encourage resource efficiency, like mandated carbon and water pricing; regulations to protect labour rights and

address discrimination in employment; and policies that strengthen governance, for instance, by tackling corruption and clarifying land rights.

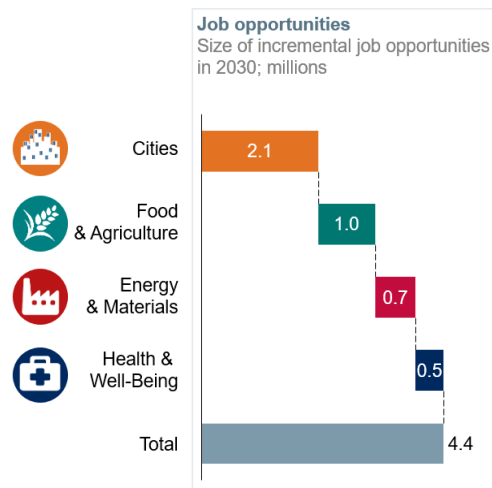
Some of these policies will add costs for individual businesses which, conventionally, business leaders might be expected to resist. And some of the goals may appear to lie beyond the responsibility of business, such as quality education and good health and well-being for everyone. However, the major market opportunities described in this section cannot succeed without a healthy, productive, secure global workforce – formal and informal – with money to spend. They won't be sustainable unless resources are priced for all competitors at levels that boost innovation while making sure current resource stocks last as long as possible. So there is a powerful business, as well as moral, case for the private sector to back progress towards all the Global Goals as they try to capture those market opportunities.

3. The impact on jobs

In 2018, the Philippine labour force comprised 43.5 million people, resulting in a labour force participation rate of 62.3 percent, which is lower than in many neighbouring countries.

While unemployment is relatively low at around 5 percent, underemployment is much higher at 14 percent, representing 5.5 million Filipinos who are in-work but looking for further employment. Unemployment tends to affect disproportionately youth, women and the well-educated.

The good news is that by 2030, these hotspots could create more than 4.4 million new jobs in the Philippines, over 10 percent of the labour force, spreading prosperity in rural and urban populations.^{xix} Opportunities in cities would create the most jobs. Developments in urban construction, mobility, and infrastructure will generate over 2.1 million jobs. More than one-fourth of the total employment potential in the country – around 1.2 million jobs – comes from just one opportunity: affordable housing.



In addition to cities, pursuing Global Goals opportunities could create more than 1 million jobs specific to food and agriculture, around 0.7 million in energy and materials, and more than .5 million in health and well-being. However, these jobs will only meet Global Goals targets if they provide decent, well-paid work, and if the companies that create them are inclusive in all their activities.

3.1 Providing decent work and more jobs

The imperative for businesses to provide ‘decent work’ – that which complies with ILO decent work guidelines and the UN Principles for Human Rights – remains critical. The ILO defines decent work as work that is productive and delivers a fair income; provides security in the workplace and social protection for families; offers prospects for personal development and social integration; gives people freedom to express their concerns as well as to organise and participate in the decisions that affect their lives; and ensures equality of opportunity and treatment for all women and men.^{xx} Businesses should ensure these principles are embedded in their own workforces, and that their suppliers are doing the same.

The Philippines has a relatively young population, which will be a key source of future growth and competitiveness. However, these young people need access to better jobs. Youth unemployment sits at 16 percent with many young people facing a number of challenges in finding work after they leave school. As a result of this slow school to work transition, one in four young persons was neither in employment, education, or training (NEET) in 2013.

The labour market inclusion of women is a pressing issue in the Philippines. Of the country’s 24.5 million people aged 15 or older that were not in the labour force in 2015, seven out of ten were women. Philippine labour force participation of women has improved only slightly over the past 25 years, from about 47 percent in the early 1990s to around 50 percent in more recent years, remarkably less than the current labour participation rate for men (77 percent). As the level of education increases, this gender gap tends to become smaller and labour force participation generally increases. Young women with low education attainment are most at risk in part due to earlier child bearing and child rearing than women with college education. The NEET rate is higher for young women than for young men – one in three – because young women are more likely to withdraw from the labour market entirely. In the Philippines, an additional US\$40 billion a year, above business-as-usual GDP, could be added to GDP by 2025 if gender equality is prioritised (see *Box xx. Gender equality and inclusion*).

The average participation rate for individuals with advanced education is significantly lower than for individuals with an intermediate education level. Individuals with a higher education qualification account for 35 percent of the unemployed population, but only 26 percent of the labour force. Conversely, only 11 percent of those that are unemployed have low level of education (primary education or no education), when this category of the population accounts for 29 percent of the labour force. The prevalence of “educated unemployed” may indicate a possible mismatch in the labour market (see *Providing training and skills*).

The World Bank has found evidence of a shortage of skilled jobs in the Philippines. Many earn a living in a low-productivity, low-wage skill services sector, mostly informal. About 30 percent of workers with secondary education are often forced to take unskilled jobs and work as laborers. More than a third of the country’s unskilled manual workers have at least a secondary education degree. This suggests that

the scarcity of quality jobs is not caused by an insufficient supply of middle-skilled workers but an insufficient supply of high-quality jobs.

The large informal sector provides an additional challenge. The labour market in the Philippines is rigid due to cumbersome regulations and higher costs for hiring and firing than all regional peers. These restrictive labour regulations have led to high informality.

The country faces the challenge of pervasive in-work poverty primarily due to low earning capacity of the poor and their limited access to regular and productive jobs. Behind these are the two interrelated root causes of in-work poverty—low education of the poor and the scarcity of productive job opportunities. The reduction of in-work poverty hinges on removing constraints to gainful employment in both supply side (better education and skills) and demand side (better jobs). It is critical that the young poor have improved access to quality education and be equipped with skills required in the modern sector of the economy. Growth in manufacturing should continue to be promoted, where labour-intensive and new and high productivity jobs can be created for low-, medium- and high-skilled workers.

The in-work poverty trend is not surprising given that real wages have been stagnant in the Philippines, despite labour productivity improvements. Aggregate real wages remained flat from 2001 to 16, with real wages falling in 7 out of 15 years. Meanwhile, labour productivity increased by 57 percent in the same period. Except for public workers, this pattern of stagnant real wages and increase productivity growth is consistent across employees' level of education, work status (permanent or short-term contracts), and class of work (private household, private establishment, or family operated). It also holds true across sectors (agriculture, industry, or services). This means the workers have not benefitted from the productivity growth. An inability to create well-paying jobs and lift real wages is likely to further encourage emigration, limiting productivity growth.

Business leaders can work with civil society and the government to develop market opportunities with the greatest potential to create growing amounts of decent work in well-paid jobs. At a minimum, business leaders are expected to ensure that jobs throughout their supply chains are physically safe, and to be ready to show how they are making sustained efforts to tackle unsafe working conditions, child labour and modern slavery. Businesses are also expected to have integrated human rights into their operations.

While many companies have embraced the need to reduce their negative environmental impacts, much less progress has been made on their social impact. The UN Guiding Principles on Business and Human Rights aim to bring this issue to the centre of business practice, through helping companies identify how to reduce human rights risk along their entire supply chains – an approach that promotes sustainable development as well as reducing harm. These principles also create a formal responsibility on both states and businesses to protect human rights and decent work, and to provide effective grievance procedures and remedies against human rights abuses. Through such approaches, workers and communities become more aware of their rights. Paying living wages ensures that families can support themselves, educate their children, and cope with periods of sickness or other contingencies. Business can engage with communities as partners in protecting and sustaining their livelihoods and in making sure women and girls can be free of sexual harassment and discrimination.

Box xx. Gender equality and inclusion

Access to rights and opportunities unaffected by gender is a moral, social and economic imperative. Gender equality will also support increase demand and market size for hotspot opportunities. Achieving Goal 5 of the SDGs has a multiplier effect on all Global Goals. The business benefits of investing in women include strengthened organizational capital, more innovation and cohesion, improved compliance and risk management, enhanced community outreach, establishment of new markets, and expansion in existing markets.

Many women in ASEAN cities work in low-paid and insecure jobs in the informal sector, and face constraints in terms of access to financial services and education. In Southeast Asia, the MGI estimates that 49 percent of women are excluded from financial services, increasing their risk of falling below the poverty line. According to MGI, women account for half of the combined Asia Pacific population, but contribute just 36 percent of the US\$26 trillion in GDP. MGI estimates that US\$12 trillion could be added in 2025 if all countries matched their best-in-region country in progress towards gender parity. If women and men played an identical role in the labour market, by 2025 we could add US\$28 trillion a year to global GDP, expanding the world's GDP by more than 25 percent.

The Philippines remains as the country with the narrowest gender gap in Asia, according to the Global Gender Gap Report 2018 of the World Economic Forum (WEF). The government has made gender equality a priority and instilled quotas for the proportion on women in government jobs. It also empowers the state to take measures to encourage gender diversity in the private sector.

While the Philippines has already made significant advances towards gender parity, challenges still exist with access to healthcare, education and work. The experience of women in the Philippines still depends largely on their socioeconomic status. Lower-income women still confront considerable gender gaps and less opportunity. For educated women, there is scope for higher representation and equal pay in professional and technical fields. Despite the high representation of Filipino women in professional and technical jobs, their pay lags behind that of men. One 2017 study found that 66.9 percent of all professionals are women, but that they earn 8.5 percent less on average than their male counterparts. In the case of technicians and associate professionals, women account for 51.1 percent of total employment but earn 11.3 percent less than men.

A key impediment to women's workforce participation is the unequal share of unpaid care work. According to the Department of Labour and Employment, 30 percent of working-age women report that household or family duties prevent them from participating in the labour market. Companies can increase access to flexible work options and childcare options. Another priority is to improve women's access to financial services. Only a small percentage of women-owned assets can be used as collateral to gain access to credit facilities. As a result, women farmers also face barriers to accessing extension services, skills development and improved farming equipment.

An additional US\$40 billion a year, above business-as-usual GDP, could be added to the Philippine GDP by 2025 if gender equality is prioritised. An equal chance for Filipino women in the workplace and in society could translate into a 7 percent increase in the country's economic growth by 2025. Increased participation by women in the labour force accounts for 59 percent of that additional GDP potential, with a further 42 percent coming from raising women's representation in higher-productivity sectors in which women work.

Taytay Sa Kauswagan (Bridges to Progress) Inc. (TSKI) is already working to enhance livelihoods for marginalized rural women in the Philippines. With credit support from the Department of Agriculture, the company assists marginalized women through microfinance, business development services, community enterprise development, training and integrated development assistance for farmers. In addition to microfinance loans, TSKI provides housing, emergency, education and water, sanitation and hygiene loans. It supports more than 230 coffee growers from the Ati tribe and cacao growers that supply Kennermer Foods. The company has a loan portfolio of US\$ 23.1 million and serves nearly 1 million members in 404 municipalities. It provides employment to 2,500 staff members in 152 branches across the Philippines. It has helped more than 200,000 clients from poor rural households and enterprises to sustain and scale up their business.

3.2 Providing training and skills

Education and training help individuals to enter and succeed in labour markets everywhere. Moreover, the Business and Sustainable Development Commission's research shows that progress on Global Goal 4, Quality Education, is linked to improvement on more of the goals than any other (see *Box xx. Access to education*). Ensuring that schooling and skills training align with future job requirements will remain an essential component of the Philippines' education and labour market policies.

However, the Philippines workforce is facing a skills gap, where many Filipinos lack the necessary skills needed for the jobs available in the market. In 2012, 36 percent of firms reported that the lack of pertinent skills was the main reason why they found it hard to fill vacancies. Similarly, according to data from the World Bank Enterprise Survey, 10.1 percent of private sector firms identified an inadequately educated workforce as a major constraint for growth in 2015, up from 7.8 percent in 2009.

For the Philippine labour market to expand, innovate and to become productive, it is important that firms find the right workers quickly and efficiently. Government will also need to do more to help people retrain and cope with periods of unemployment or underemployment. Sustainable business leaders can support government spending in this area and complement their efforts. Businesses can provide critical advice to government on the skills required for jobs of the future and engage with career guidance services and programmes that prepare young people for the world of work. One mechanism is support for active labour market policies such as training schemes, employment subsidies and public employment programmes.

Companies can also make a more direct contribution and invest in workers by providing them with skills and vocational training. That means nurturing specific technical expertise as well as broader skills like problem solving and communication, fostering entrepreneurship, and building opportunities with traditionally marginalised or disadvantaged groups. There are many opportunities for businesses to be

more actively involved in this area. Some companies, such as Schneider Electric and IBM Philippines, have already partnered with educational institutions to upgrade skills and familiarize graduates or graduating students with more current technology to serve their immediate requirements

Local governments in the Philippines have an active role in the management of employment and skills programmes. The JobStart Philippines Act aims to shorten the transition from school to work for young people and increase their chances of integrating into productive employment. PhilJobNet is a vehicle for jobseekers to find career opportunities posted by partner employers, free of charge. Employers, in turn, are provided access to the profiles of applicants and prospective employees. Programmes where employers are engaged receive higher effectiveness ratings.

Box xx. Access to education

Educational attainment of the Filipino population has steadily increased in recent decades. Policymakers have introduced universal kindergarten, created senior high school, provided greater funding for basic education, and expanded the Pantawid Pamilya Program, which has boosted school attendance among the poor. However, the Philippines has yet to reach the educational attainment standards of more developed countries, with many of the country's education systems still failing to deliver access to high quality education. In 2016, about 1.5 million children, adolescents, and youth were out-of-school in the Philippines. Poverty limits educational chances. Poor Filipino children have limited access to early childhood education. Almost 50 percent of poor adults have no more than primary schooling, and less than 10 percent of poor adults have post-secondary education. The high cost of education accounts for one-fifth of cases for why young Filipinos, aged between 6 and 24 years old, are out of school. Apart from poverty, natural disasters also create barriers to access to education. In 2013, Typhoon Haiyan destroyed over 7,000 schools. Without urgent action, the prospects of these children and young people lacking access to schools and not learning necessary skills are severely diminished.

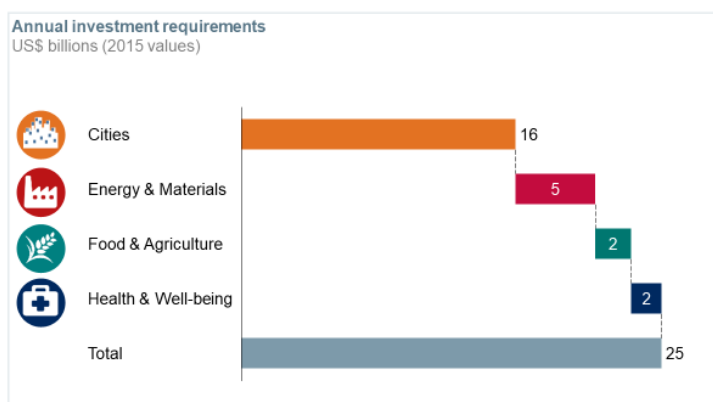
Citizens look first to governments to provide education, and education is one of the Philippine government's priority sectors. But business leaders can be crucial to strengthening education systems by supporting policy shifts that address underlying systemic weaknesses. Felta Multi-Media Incorporated partnered with Intel Education and Microsoft Philippines to launch a ruggedized, water-resistant laptop. Aimed at school children, the device also comes with a macro lens that kids can use to explore objects, and a thermal scanner that can help teach them about their own bodies.

The improvement in mobile services, expansion of education technology platforms, and the expansion of the national broadband network provide fertile opportunities to improve education access. Examples include developing low-cost devices for students in remote villages to access online education and providing microfinancing options for households to manage the costs of education. For example, Edtech startup Kukua has raised US\$2.5 million to teach African children basic literacy and mathematics through game-based smartphone apps. Increasing access to education, through digital platforms alone, could lead to a 0.9 percent increase in employment for lower-middle-income countries such as the Philippines. Improving access to

education is the most cross-cutting of enablers, impacting each of the report’s highlighted sustainable business opportunities.

4. Sustainable finance in the Philippines

Substantial investment will be needed to capture the Global Goals opportunities. Our analysis estimates that an additional US\$25 billion of funding is required annually to realise the priority hotspot opportunities showcased above, with the lion-share of investment required in Cities.



Major changes in the financial system will be required for that seemingly ample capital supply to meet the investment demand generated by the Global Goals. Many sectors, including low-carbon, resilient infrastructure, and sustainable land use, are still heavily under-capitalised due to investment risks, both real and perceived. But this hurdle may be overcome by developing the region’s capacity for raising blended finance (or concessional finance) for projects, where public and philanthropic finance providers take on high risk tranches of an investment, encouraging private investors to come in and provide the remainder at lower risk. Box xx describes successful example of blended finance used for a sustainable power project in Laos.

Across Asia, public infrastructure investment already has a strong track record in Asia and the region’s pool of available public finance is growing fast. China’s Belt and Road initiative is an example of the government funded ambitious sustainable infrastructure transformation. Countries such as India and Indonesia have announced multi-year, multi-hundred-billion dollar infrastructure build-out plans based on domestic spending, including a five year, \$500 billion infrastructure initiative in Indonesia. In the Philippines, the government’s flagship “Build, Build, Build” infrastructure drive aims to raise spending on critical infrastructure to US\$164 billion by 2022.

However, public capital will never be enough to finance the investment that the Philippines needs. That is why we need to mobilise private capital to accelerate the transition towards sustainable infrastructure investment. Wider and more efficient use of blended finance instruments in the Philippines could encourage much more private investment in sustainable infrastructure by helping to share the risks

between public and private investors. Blended finance is catalytic in attracting private investment in a range of sectors, such as clean energy and sustainable land use.

Achieving a step change in the number of projects financed in a blended way – combining private and public funding – will create a pipeline of attractive, bankable projects (following SDG-aligned models showcased above, creating an enabling environment, and building local capacity. The Government of Indonesia, for example, has created “SDG Impact One”, the first-of-its-kind blended finance structure alongside PT SMI Indonesia – the National Infrastructure Fund - to invest in sustainable infrastructure and mobilise foreign institutional capital in Indonesia. ‘SDG Impact One’ has successfully mobilised US\$2.5 billion in its first year, and is on track to reach its US\$4 billion target.

Box xx. Sustainable Infrastructure Investment: Nam Theun 2 Hydropower project, Laos

Inside one of Asia’s poorest countries, the Nam Theun 2 (NT2) hydroelectric dam is generating both electricity and national income. Like most big dams, it has divided opinion. But the project’s backers hope it will come to be seen as a model in socially sustainable infrastructure. On track to generate US\$2 billion in revenues over 25 years, the 1,070-MW plant could contribute significantly to development and poverty reduction in Laos.²⁴ Opponents of NT2 have criticised these institutions for supporting a project that displaced more than 6,000 local people.²⁵ But its backers hail it as a success in leveraging international finance for poverty alleviation.²⁶ While a portion of the electricity generated stays at home, the bulk is exported to Thailand under a 25-year fixed-price power purchase agreement, meaning a big income boost for Laos.²⁷ That revenue is largely reinvested in programmes to tackle poverty, boost health and education and improve environmental management domestically.²⁸

The US\$1.3 billion dam was jointly financed by a host of multilateral development banks, bilateral funding agencies and commercial banks from around the world. In all, 27 parties were involved, from the World Bank, Asian Development Bank and French Development Agency AFD to BNP Paribas and Fortis Bank.²⁹

The Nam Theun 2 Power Company, whose owners include Electricité de France, the Laos government and Thai power producer EGCO,³⁰ has also sought to mitigate environmental and social impacts, investing heavily in local

²⁴ World Bank, 2015. Can we make hydropower work for all in Laos?

<http://www.worldbank.org/en/news/opinion/2015/05/14/can-we-make-hydropower-work-for-all-in-laos>

²⁵ International Rivers, n.d., Nam Theun Dam <https://www.internationalrivers.org/campaigns/nam-theun-2-dam>

²⁶ World Bank, 2015. Can we make hydropower work for all in Laos?

<http://www.worldbank.org/en/news/opinion/2015/05/14/can-we-make-hydropower-work-for-all-in-laos>

²⁷ World Bank, PPIAF, Nam Theun 2 (NT2) Hydroelectric Project

<https://ppiaf.org/sites/ppiaf.org/files/documents/toolkits/Cross-Border-Infrastructure-Toolkit/Cross-Border%20Compilation%20ver%2029%20Jan%2007/Resources/Sinha%20-%20Case%20Study%20Nam%20Theun.pdf>

²⁸ European Investment Bank, 2015. “Update: Nam Theun 2 Hydropower Project, Laos”, updated Nov 1

http://www.eib.org/infocentre/press/news/topical_briefs/2005-november-01/nam-theun-2-hydropower-project-laos.htm.

²⁹ World Bank, Project Finance and Guarantees, 2005. IDA guarantee paves renewed interest in private hydropower – the Nam Theun 2 Project

http://siteresources.worldbank.org/INTGUARANTEES/Resources/Lao_NamTheun2_Note.pdf

³⁰ European Investment Bank, 2015. “Update: Nam Theun 2 Hydropower Project, Laos”, updated Nov 1

http://www.eib.org/infocentre/press/news/topical_briefs/2005-november-01/nam-theun-2-hydropower-project-laos.htm

conservation efforts,³¹ as well as new housing and infrastructure on the Nakai Plateau.³² Household surveys suggest resettled communities are better off today than before they moved, says the World Bank.³³

Challenges remain, including ensuring sustainable livelihoods for resettled people and supporting downstream areas, where campaign groups say fisheries and water quality have been disrupted.³⁴ However, by enabling small and impoverished Laos to sell clean electricity to its energy-hungry neighbour, NT2's backers point to a double win, and say they have shown that hydropower – done properly – can be an important development tool.³⁵

4.1 Mobilising blended finance

Unlocking each of the Global Goals opportunities in the Philippines will depend on mobilising the necessary investment to improve the supportive infrastructure required in a range of sectors – energy, transportation, information and communications technology (ICT), agriculture, logistics, water and sanitation – and in many forms, from schools and hospitals, to payment systems broadband networks that supply high-speed internet access. Infrastructure has been a major source of concern for foreign investors. According to the WEF Global Competitiveness Index 2017, infrastructure quality is judged to be low in the Philippines, ranking 90th out of 144 countries, behind many other ASEAN economies such as Vietnam (76th), Indonesia (62nd), Thailand (44th), Malaysia (24th) and Singapore (2nd).

Recognising the importance of creating an enabling environment to engage the private sector, the Philippine government has embarked on an ambitious infrastructure drive to make the country a more attractive investment destination. The initiative, called “Build, Build, Build”, aims to raise spending on crucial infrastructure like roads, bridges, railways and ports from less than 5 percent of GDP to more than 7 percent (US\$164 billion) by 2022. The government is looking at 75 flagship projects, which include six airports, nine railways, three bus rapid transits, 32 roads and bridges, and four seaports that will help bring down the costs of production, improve rural incomes, encourage countryside investments, make the movement of goods and people more efficient, and create more jobs.

International development funding from the Asian Development Bank (ADB) and Japan International Cooperation Agency (JICA) has been granted to the country for infrastructure development. China's Belt and Road Initiative (BRI) and the establishment of the Asian Infrastructure Investment Bank (AIIB), of which the Philippines is a member, will also open up new funding sources for infrastructure projects in the country. This is a good start, but the public sector will not be able to plug the full finance gap – it is imperative that the country attracts scale up private capital. For example, an estimated US\$600 million in investments are needed to achieve Philippine energy efficiency targets for year 2020, as well as

³¹ “Nam Theun 2 Watershed Management and Protection Authority,” accessed June 18, 2016, <http://www.nt2wmpa.gov.la/en/about/>.

³² World Bank, 2015. Can we make hydropower work for all in Laos? <http://www.worldbank.org/en/news/opinion/2015/05/14/can-we-make-hydropower-work-for-all-in-laos>

³³ World Bank, 2015. Can we make hydropower work for all in Laos? <http://www.worldbank.org/en/news/opinion/2015/05/14/can-we-make-hydropower-work-for-all-in-laos>

³⁴ <https://www.internationalrivers.org/campaigns/nam-theun-2-dam>

³⁵ World Bank, 2015. Can we make hydropower work for all in Laos? <http://www.worldbank.org/en/news/opinion/2015/05/14/can-we-make-hydropower-work-for-all-in-laos>

US\$34 billion to meet the country's 2030 targets for renewable energy installation, according to the Department of Energy.

Recognising that for a growing, middle income country, Official Development Assistance will play an ever-decreasing role, and that national tax receipts will be insufficient to reach the Global Goals, Indonesia has experimented with the issuing of a sovereign Green Sukuk by the Ministry of Finance, attracting Islamic Finance through SDG-aligned zakat, and launching 'SDG Indonesia One', platform for infrastructure development financing for the Global Goals established and managed by the state-owned financing company PT Sarana Multi Infrastruktur (SMI). Since its launch in 2018, SDG Indonesia One has attracted over US\$2.5 billion into its fund out of a target of US\$4 billion. Indonesia is not unique – both Colombia and Bangladesh are also building local capacity by scaling local infrastructure units to have visibility of pipeline and political priorities, as well as access local financing and attract local talent. The Philippines should consider replicating their example.

Wider and more efficient use of blended finance instruments and vehicles could attract much more private capital for sustainable infrastructure in the Philippines. Institutional investors are looking for investment grade infrastructure projects without high uncertainty.

Blended finance is the strategic use of public or philanthropic development capital for the mobilisation of additional external private commercial finance for Global Goals-related investments; where public and philanthropic bodies take on the high-risk and more policy-sensitive tranches of an investment, encouraging private investors to fill the remaining gap at lower risk. Blended finance instruments provide an opportunity for a much wider set of investors to start participating in traditionally more challenging asset classes like emerging markets' infrastructure, where governments are increasingly willing to provide a significant risk cushion for development-related investments. These instruments can help apportion the risks of infrastructure projects between public and private investors in a way that makes the risk/return profile more feasible.

Blended finance models are seen as one of the best ways to attract the US\$6 trillion a year needed to narrow the infrastructure funding gap (a trillion of which is estimated to come from the private sector) and achieve the Global Goals, allowing commercial investors to invest in places and projects where they otherwise could not. Blended finance is a critical enabler of better, more inclusive growth, because it combines the public and private capital needed to invest in sustainable infrastructure, better land-use, greater innovation and new vehicles for social inclusion.

The last 5 years has seen the blended finance market double in size, driven largely by investment in clean energy. The market could double again in the next 3-4 years as providers of concessional and other forms of development capital earmark more money to be used for blending, and as private investors look to take advantage of this risk cushion. To make this happen, we need to see a dramatic scale-up in the size of blended finance vehicles, moving from many fragmented US\$100 million funds, to a growing number of vehicles, each with US\$1-10 billion of capital. In parallel, the market will still require innovative, more bespoke funds to ensure small-scale and higher-risk, frontier projects are served.

There is a major opportunity for the world to increase its underlying rate of growth, deliver the Sustainable Development Goals (including climate) and strengthen long-term returns for savers. There is potential to extend the use of blended finance in the Philippines beyond infrastructure to encourage private investment into new sectors including some of the Global Goals opportunities mentioned in this report, namely related to healthcare, sustainable agriculture and land use, affordable housing and off-grid clean energy. Scaling up blended finance could be the game-changer which makes it possible to capture this prize. For this to happen, leaders across the whole investment system will need to take collective action.

Development banks play a central role in scaling up the blended finance market by setting ambitious targets to mobilise external private finance. MDBs currently mobilise overall less than US\$1 of private capital for every development dollar. This ratio needs to increase significantly – more than double over the next decade – to get anywhere close to the trillion-dollar financing target. Achieving higher ratios will require the MDBs to sharply increase their share of private sector activities which currently accounts for only around 30 percent of MDB activities. Increasing these targets will likely shift portfolios more toward infrastructure investment and toward more stable middle-income countries. Setting targets should also change how the development banks do business and engage with the private sector, leading to product standardisation and asset pooling across the MDBs/DFIs.

Critical pathways to accelerate action towards fulfilling this funding gap are mobilizing local private capital, creating an enabling environment, building capacity with local infrastructure finance. The Philippines could follow the pioneering examples of Indonesia's PT SMI, Colombia's FDN, Bangladesh's IDCOL as models for building local capacity. Ultimately, however, the most crucial element of closing the funding gap is developing a pipeline of bankable, investible projects – clear investment opportunities with long-term commercial return to attract the private sector.

- ✓ **PT SMI Indonesia.** A state-owned enterprise under the coordination of Ministry of Finance, with a main role as a catalyst to support the acceleration of infrastructure development in Indonesia. It has a robust commitment to sustainable development through the provision of financing facilities to green projects in Indonesia. PT SMI collaborates in channelling sustainable development funds from the Green Climate Fund, AFD, UNDP, GIZ and World Bank. Its projects are focused on hydropower, wind, solar, geothermal and biomass energy. The enterprise issued an IDR 3 trillion (US\$210 million) green program bond, whereby the proceedings are allocated towards finance sectors of clean transportation, renewable energy, and sustainable water and waste management. PT SMI also finances social infrastructure, such as hospitals, markets, education and tourism.
- ✓ **FDN Colombia.** A private sector financial institution that catalyses investments in Colombian infrastructure and addresses market failures that undercut optimal infrastructure financing. It offers products and services such as long-tenor loans, subordinated debt, and credit enhancements, which are critical to financing infrastructure. It holds assets of \$228 million, and it has now aligned with the Colombian

government to upgrade the country's road network. Over time, FDN is expected to expand the scope of its projects to all segments of the infrastructure sector.

- ✓ **IDCOL Bangladesh.** A financial institution whose role is to bridge the financing gap for developing medium to large-scale infrastructure projects in Bangladesh. It is the market leader in private sector energy and infrastructure financing, where in 2016 it held about US\$866 million in total assets. IDCOL aims to catalyse and optimize private sector participation in promotion, development, and financing of infrastructure, renewable energy and energy efficient projects in a sustainable manner through public-private partnership initiatives. It financed the installation of more than 1500 MW of power plants, and US\$4.5 million across in solid waste management, water and treatment plants, battery recycling projects

4.3 Establish Sustainable Special Economic Zones

In the Philippines, Special Economic Zones are an established and expanding concept – however performance of the country's 379 gazetted zones has been mixed

Currently, there are 379 SEZs accompanying over 42,000 hectares of land; incl. Manufacturing Economic Zones, Information Technology Parks, Agro-Industrial Economic Zones, Tourism Economic Zones, and Medical Tourism Centres

One example is the Clark Freeport Zone (CFZ), which has attracted US\$2.3 billion in investment since 1995

The Philippine Economic Zone Authority (PEZA) was created to foster the development of SEZs

PEZA has ambitious plans to convert idle lands into economic zones – target of at least two ecozone per municipality or city nationwide

SEZs were established through Republic Act No. 7916 or the "The Special Economic Zone Act of 1995"

Positive impact of SEZs:

- Greater FDI (grown by 23% yearly)
- Increased manufactured exports (at annual rate of 5%)
- Increased employment (at annual rate of 10%)
- Enhanced skill levels (especially those in the electronics sector)

Negative impact observed in some SEZs:

- Costs of infrastructure development exceed benefits
- Failure to spur investment due to location
- Used for smuggling activities (e.g., used cars), leading to lost taxes
- Significant foregone revenues due to tax holidays
- Social costs including impact on agriculture, displacements of rural communities and human rights abuses

In the Philippines, Special Economic Zones (SEZs) are an established and expanding concept; however, the country's experiences of SEZs has been mixed. Traditional SEZs are areas carved out by government, subject to different regulations to the rest of its national territory. SEZs offer incentives - including duty-free importing, streamlined customs procedures, efficient administration, pooled logistics and corporate tax exemptions – to create a favourable business environment and attract industrial investment within the zone.

There are approximately 5,000 economic zones globally, and as of November 2017, the Philippines has gazetted 379 economic zones nationwide, comprising over 42,000 hectares of land spread across sectors including manufacturing, agriculture, and information technology. Despite well-performing examples like the Clark Freeport Zone, which has attracted US\$2.3 billion in investment since 1995, the country has observed negative effects from some SEZs, including: a failure to attract investment and secure return on initial infrastructure development (often due to unfavourable locations); a failure of some zones to create development outside their enclaves; and social costs due to agricultural impacts, and community displacement.

The Philippines Economic Zone Authority (PEZA) has ambitious targets to gazette further zones. It is crucial that further SEZ development is done in a sustainable, inclusive way and is well-planned in order to attract investment and create both commercial return and SDG-benefits.

Sustainable Special Economic Zones (SSEZs) can drive attainment of the Global Goals by embedding sustainable operating principles into existing or new SEZs, developing inclusive sectors and enabling the critical infrastructure needed to support inclusive businesses and business models. SSEZs represent the next horizon in industrial development; moving beyond the traditional extractive and enclave-focused growth models of traditional SEZs and the “do no harm” principles of low-carbon zones, to driving outsized positive commercial, social and environmental impact by providing a safe landing space for SDG-aligned business models like the hotspot opportunities above.

SSEZs leapfrog the issues found in SEZs by adopting an SDG lens and by embedding circular economy design within the zone to maximise industrial symbiosis opportunities, improving social and environmental outcomes, whilst reducing the costs of doing business.

Box xx - LADOL

In Nigeria, LADOL Free Zone is developing the world’s first SSEZ, leading the way in delivering the SDGs across Africa through sustainable industrialisation. LADOL is a 140 hectare site in central Lagos that has traditionally focused on oil and gas and shipping fabrication, hosting the US\$3.3 billion Egina FPSO, West Africa’s largest ever shipping fabrication project. The Zone is committed to hosting innovative local and international tenant businesses within a fully circular industrial system to drive commercial success and realise the SDGs in Nigeria.

Sectors to be supported within the zone include: a subsidised tertiary care hospital, an upskilling academy, a cleantech hub, an agri-processing hub, a bamboo fabrication facility, and a modular, pre-fabricated housing construction facility. Through industrial symbiosis models of re-using agricultural and bamboo waste for energy, SSEZ design will transition LADOL from diesel generated power to LNG and finally towards sustainable biomass – improving environmental outcomes, increasing reliability as well as reducing the cost of power by up to 90%.

5. Next Steps – actions for business, government and civil society

More than half of the Global Goals aim to meet basic needs, empowering and protecting those currently disadvantaged in society. Achieving these goals is also a business imperative. Without improving the incomes, health, rights, and education of the vast majority of the world’s working people – not to

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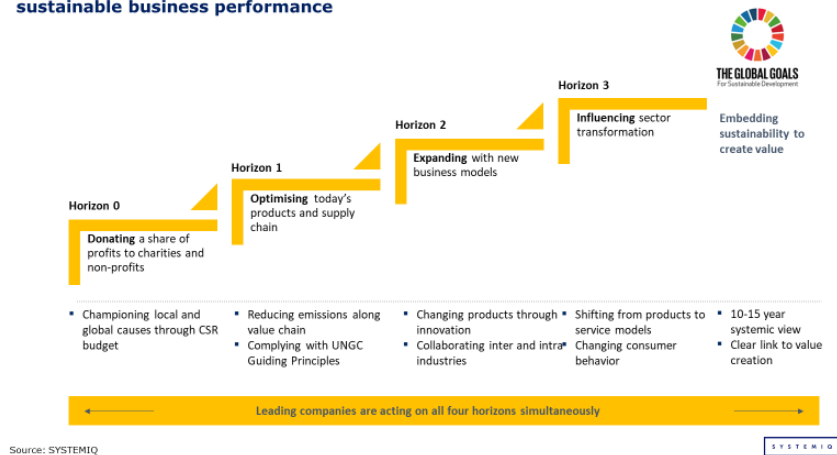
mention providing better social protection – the business opportunities arising from sustainable development will not materialise. Various global multi-stakeholder initiatives have focused exclusively on developing principles for responsible business and spreading responsible business standards along global supply chains. The largest initiative is the UN Global Compact, with its principles-based framework that calls on companies to align their strategies with universal principles of human rights, labour, the environment, and anti-corruption – 30 Filipino companies are signatories to this Compact.

The public sector, civil society, and increasingly the private sector are urgently pursuing the same Global Goals, and they need to support each other to achieve them. There will be different emphases and difficult trade-offs to negotiate but, in principle, all these stakeholder groups are pointing in the same direction. All three groups could renew a social contract through the following actions.

5.1 Actions for business

The transition towards sustainable business models represents potentially the most important investment opportunity for Filipino businesses in the coming decades. Leading global businesses and notable Filipino market-leaders are embracing the Global Goals and have found that shifting to SDG-aligned models creates significant commercial benefit as well as positive social and environmental outcomes. Leading global businesses are operating across all three horizons of sustainable business performance: 1) Optimising today's products and supply chain; 2) Expanding with new sustainable business models; and 3) Influencing sector transformation.

Global sustainability leaders move beyond philanthropy to embrace the three horizons of sustainable business performance



The 'hotspots' showcased in this report demonstrate clear models and sector opportunities across each of the three horizons. Pursuing the opportunities showcased in this report will allow leading Filipino companies to gain a global competitive advantage in their chosen sectors.

5.2 Actions for government

At its essence, the government must guide the transition to a new sustainable model of growth, supporting the development of a pipeline of sustainable projects capable of mobilising large-scale private finance. Private capital will rarely flow at meaningful scale where corruption, weak judiciary, bureaucracy and unpredictable government decision-making processes dominate. Thus, it is essential that the Filipino government focuses on continuing to improve the enabling environment for business, by improving local investment conditions, reducing corruption, improving the ease of doing business, strengthening policies and regulatory frameworks and investing in its own people and infrastructure.

The Philippines Government has set an ambitious, progressive national strategy through its various policy documents – the Philippines Development Plan, Ambisyon Natin 2040, and specific sector plans like the Philippines Energy Plan. It must now ensure that its actions match its lofty words; for example, by committing to supporting a renewable energy transition and move away from investing in new fossil fuel projects.

As this report shows, infrastructure is critical to achieving the Global Goals and stimulating private sector growth. The government can take on a stronger role in financing infrastructure projects, and should explore options to move away from official development assistance and solely government funded projects towards new blended finance models, capable of attracting more private sector investment. Examples from Bangladesh, Indonesia and Colombia in Section 4 show how countries can structure innovative infrastructure funds to this end.

Ultimately, finance will only attach to clear, bankable, risk-mitigated projects with competitive rates of return. This further requires investment and commitment to scaling the enablers – Sustainable Special Economic Zones and Clusters, financial inclusion, gender equality and access to education - required to unlock the key hotspot opportunities highlighted in this report.

5.3 Actions for civil society

Civil society has a crucial role to play in monitoring institutions and ensuring businesses, governments, and community organisations are transparent, respect the rule of law, and are advancing positive social and environmental outcomes. The new Sustainability Reporting Guidelines for Public Companies recently launched by the Philippines Securities and Exchange Commission will support monitoring efforts by increasing business transparency and creating data points to measure progress against the Global Goals and domestic policies like Ambisyon Natin 2040. Pioneering organisations like Integrity Action - an innovative network of NGOs, universities and policy makers that empower local communities across Africa, Asia and the Middle East to work with the private and public sector to tackle corruption within institutions and improve the quality of public services and infrastructure delivery – provide a model for citizen engagement in monitoring and advocacy.

Civil society also has a tremendous convening and thought leadership power. It can engage in cross-sector dialogue advocating for changes to laws and practices that currently fail to deal with or are inadequately dealing with corruption, modern technology, socially destructive practices, and disruptive change. Think tanks and universities can also drive innovation and chart the course towards more sustainable models, products and services; for example as Singapore's Temasek Life Sciences Laboratory (TLL) is doing with its innovations in fish production and urban aquaculture.

Commented [NCT]: @UNDP – which organization would be best to feature here from the Philippines? PBSP/PBE?

NGOs have shown capacity in promoting sustainable community development, as they are able to reach out to poorer sectors of society and mobilize the population. For example, Habitat for Humanity has served more than 140,000 families with decent housing and improved access to clean water, healthcare, education and livelihoods. CARE Philippines, through focus on girls and women, social justice and poverty reduction, has worked since 1949 in providing emergency relief, implementing sustainable livelihood projects and supporting more than 963 poverty-fighting development and humanitarian aid projects in 94 countries. Conservation International (CI) Philippines has worked with the government and local communities to protect ecosystems since 1995.

Conclusion

This report has presented the case for businesses to concentrate on solving the greatest challenges facing the Philippines that the Global Goals set out to overcome. While the Philippines has experienced remarkable growth, there are clear structural challenges – socially, environmentally and infrastructurally – and a need to accelerate the transition towards a truly inclusive, sustainable growth models.

Realising the opportunities showcased in this report can leapfrog these challenges and unlock US\$82 billion in value above business as usual. However, pursuing these opportunities can do much more than catalyse substantial economic return; they can also build a more inclusive, secure and sustainable society, not least through the 4.4 million jobs they can create.

Embedding the Global Goals in the Philippines over the next decade is an ambitious vision. But for true pioneers in the Philippines and beyond, it's a vision that offers significant growth through solving the country's biggest problems. Building a more sustainable Philippines requires true cross-sector collaboration across the private and public sector, and across finance and civil society. This report showcases the most bountiful opportunities for Filipino pioneers to collaborate and lead the transition towards more sustainable business models, marrying commercial return with social and environmental leadership. But, with great opportunity comes great urgency - there has never been a better or more urgent time for business to lead.

ⁱ AlphaBeta, *Valuing the SDG Prize*

ⁱⁱ AlphaBeta, *Valuing the SDG Prize*

ⁱⁱⁱ McKinsey Global Institute, *Tackling the world's affordable housing challenge*, 2014.

^{iv} McKinsey Global Institute, *Tackling the world's affordable housing challenge*, 2014

^v EV Global Outlook, *Understanding the Electric Vehicle Landscape to 2020*, April 2013.

^{vi} McKinsey Global Institute, *Resource Revolution: Meeting the world's energy, material, food and water needs*, November 2011.

^{vii} *Accessibility in Cities: Transport and Urban Form*, NCE Cities Paper 03: LSE Cities (London School of Economics and Political Science, 2014).

^{viii} AlphaBeta and the Business and Sustainable Development Commission, *Valuing the SDG prize: Unlocking business opportunities to accelerate sustainable and inclusive growth*, 2017.

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