Number 20

Making It

Industry for Development

Shared prosperity

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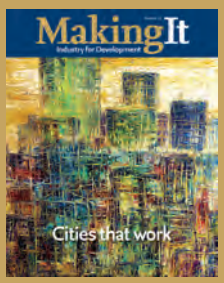

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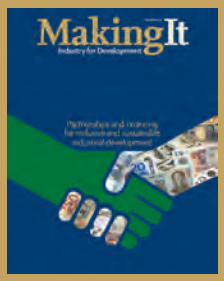

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A quarterly magazine. Stimulating, critical and constructive. A forum for discussion and exchange about the intersection of industry and development.

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Editorial

With 2015 marking the transition from the Millennium to the Sustainable Development Goals, the international community can celebrate many development successes since 2000. However, steady prosperity has not been achieved throughout the world and there remain remarkable differences between and within regions, countries and societies.

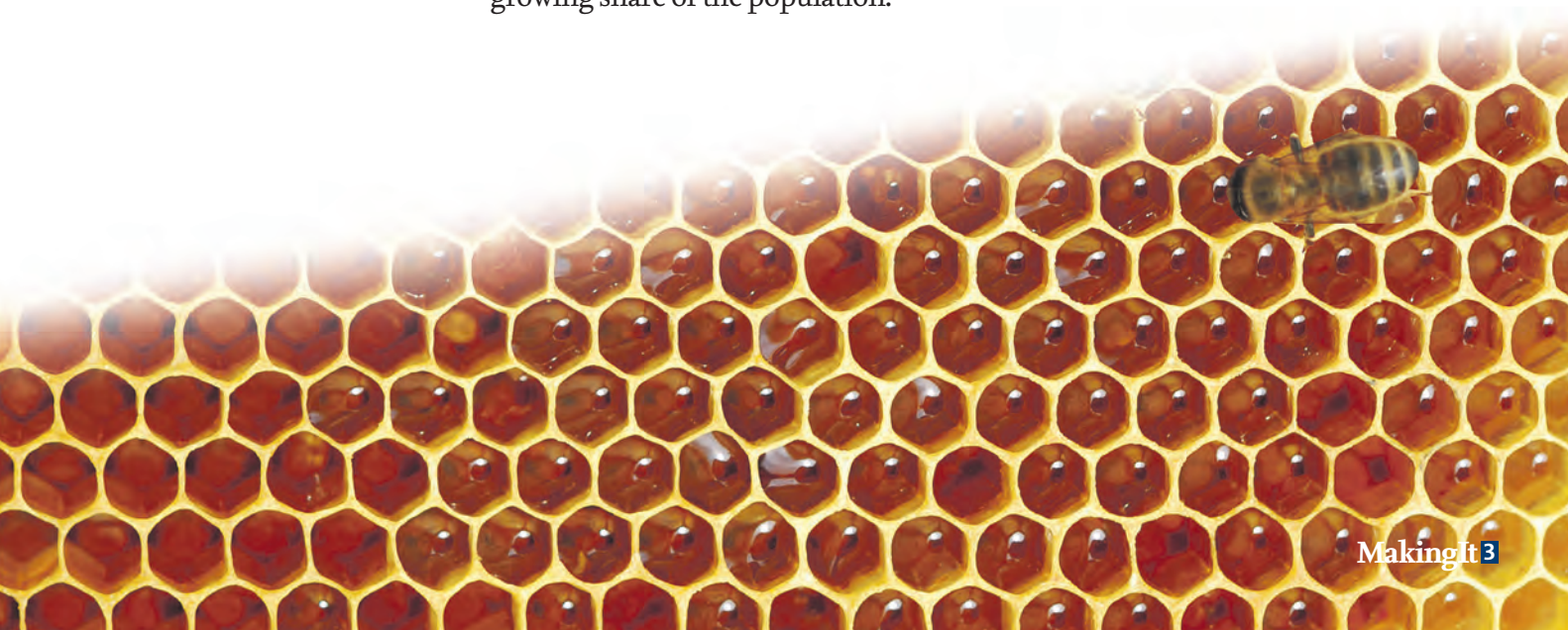
Growth in the past has occurred too often without providing the opportunity of participation and reward to significant segments of the population, and women and youth in particular.

To really improve the living standards of all women and men, the benefits of growth have to be shared more equitably. This can be achieved when decent employment opportunities are available for all segments of the labour force. Manufacturing industries and their related services sectors can absorb large numbers of workers, provide them with stable jobs and good benefits, and increase the prosperity of their families and communities. An efficient agro-industry, combined with increased investment in agriculture, enhances economic stability for rural households, increases food security and promotes innovation throughout industrial value chains.

Experiences from the past decade show that shared prosperity has, in most cases, been based on progress made in absorbing the labour force more effectively into higher-income industrial jobs. Based on this experience, it is essential to better integrate women and youth in the process of creating an industrial workforce. This not only yields positive multiplier effects for households and communities but also contributes to greater social cohesion.

Increased participation in international trade also helps to improve local working conditions through the need to comply with international standards and greater access to modern technologies and best practices.

Industry is an important source of decent employment, accounting for almost 500 million jobs worldwide – or about a fifth of the world's workforce. Only those economies that have the ability to constantly generate new activities based on upgrading to higher levels of value-addition, higher productivity, or higher returns to scale – economies characterized by structural change – can sustain stable jobs and increase the prosperity for a growing share of the population.



MakingIt
Industry for Development

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GLOBAL FORUM

The Global Forum section of *Making It* is a space for interaction and discussion, and we welcome reactions and responses from readers about any of the issues raised in the magazine. Letters for publication in *Making It* should be marked 'For publication', and sent either by email to: editor@makingitmagazine.net or by post to: The Editor, *Making It*, Room D2142, UNIDO, PO Box 300, 1400 Vienna, Austria. (Letters/emails may be edited for reasons of space).

LETTERS

Policy matters

In Anna Pegels' thoughtful article (*Making It*, number 18) on the need for a transition of values if we are to implement 'green industrial policy', she writes "the incentive to abide by new environmental standards is simply too low". Although she concludes that "the market should remain the key instrument for policy", she also acknowledges that "left to the market alone, the renewable energy revolution – with its rapidly decreasing costs and global investments in the billions – would never have occurred".

That's why the 'market' needs a push (and not just a nudge)!

Mariana Mazzucato already (in her article 'Who will lead the green revolution?' in *Making It* number 17) explained that governments need to take the lead. Renewable energy technologies will not develop 'naturally' through market forces, she explains, "in part because of embedded energy infrastructure, but also because of a failure of markets to value sustainability or to punish waste and pollution". Businesses will only join in once the riskiest and most capital intensive investments have been made.

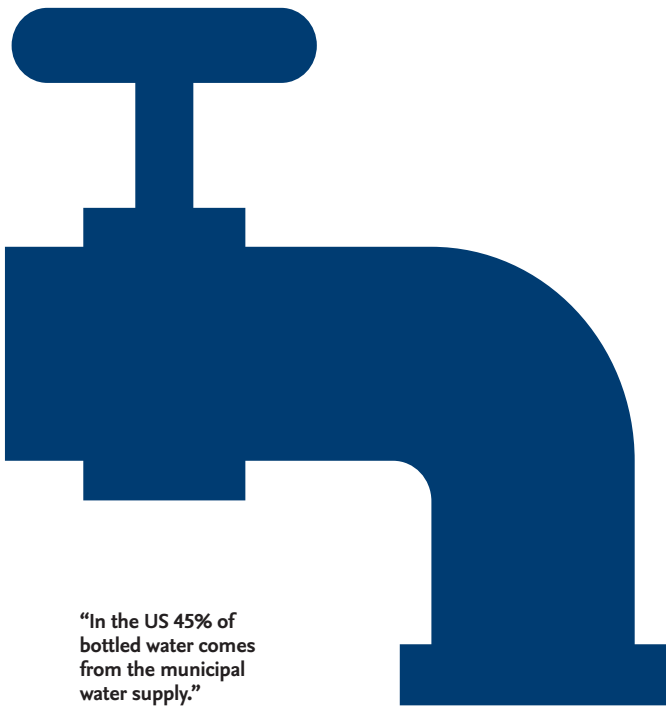
So, let's be clear where the 'policy' has to come from. As Mazzucato concluded: "The state is the iron horse of the green revolution: the speed and direction of change will crucially depend on it."

● **Findlay Weir, by email**

Tapped resource

In response to the issue of *Making It* about water, can I raise the fact that the world now drinks as much packaged and bottled water as we do milk? Global sales are to hit over 230 billion litres this year, with a surprisingly high amount (usually brands like Evian) imported from other countries, even where there's a plentiful supply in the home nation. Here in the US, about 55% of bottled water comes from springs but the other 45% comes from the municipal water supply – that's companies bottling what comes out of the tap and selling it to us!

● **Will Jacques, by email**



"In the US 45% of bottled water comes from the municipal water supply."

The century of cities

I saw this fact in a UN tweet somewhere: "The world's cities occupy just 2% of the Earth's land, but account for 60 to 80% of energy consumption and 75% of carbon emissions."

Take the first part – when you hear some people talk of overcrowding, you would think there was no room left on this planet! Half of our population takes up just one fiftieth of the space.

The second part – the very fact that cities have high density, means it's possible to use smart governance and technological innovation to reduce resource and energy consumption.

● **Lena Duquemin, website comment**

Parag Khanna's keynote feature in *Making It* number 18 ("In the century of cities") touches on a number of the challenges facing the world's cities in the 21st century. One phrase particularly stands out for me: "I strongly believe that governments should devote most of their attention to the issue of inequality between the slums and the glamorous side of the city."

A good example comes from Latin America and the Caribbean region in the way the Inter-American Development Bank has launched the Emerging and Sustainable Cities Initiative. The idea is to support sustainable development in medium-sized cities in the region which have expanded at a rapid rate.

Already the second-most urbanized region on the planet, the region has gone from a 62% urbanization rate in 1980 to 81% in 2011, and is expected to reach 89% by 2050.

For further discussion of the issues raised in *Making It*, please visit the magazine website at *www.makingitmagazine.net* and our Twitter page, *@makingitmag*. Readers are encouraged to surf on over to these sites to join in the online discussion and debate about industry for development.

This process happened without adequate planning and included placing the urban poor in marginalized slum areas most vulnerable to disaster risk and climate change. Twenty-six per cent of the urban population lives in poverty or extreme poverty and nearly one in four people live in slums. The Initiative hopes to address these challenges by developing planning tools like greenhouse gas inventories and risk maps, as well as action plans that include low-carbon and climate-resilient development.

The Initiative supports local efforts to improve the quality of life of citizens, focusing particularly on the urban poor. For example, an upgrade of the public transport system in La Paz, in Mexico, provides cleaner, more efficient and comfortable buses for up to 50,000 people per day. Street improvements in Mar del Plata, in Argentina, have enhanced walkability for more than 13,000 pedestrians every day. The action plan for Managua, in Nicaragua, includes a programme for upgrading poor neighbourhoods with new social housing, public transport and storm water drainage.

Khanna talked about the need for shared responsibility between the public and private sectors – "what I call hybrid governance", he writes, where industry plays an essential role in building sustainable and inclusive cities.

● **Tony Marchi, New York City, USA, website comment**

Dongtan, China's ultra-green city, was supposed to be ready and functioning in time for the 2010 Shanghai World Expo. The project was all about "zero emissions" and recycled waste. The city would ban cars, recycle water, and surround itself with organic farms and forests.

Arup, a British engineering consultancy firm, was contracted in 2005 by the developer, the Shanghai Industrial Investment Company, to design and masterplan the city. In 2005, the then prime minister of the UK, Tony Blair, signed a deal for the groundbreaking plan.

The city was meant to become home for 50,000 people by 2020, yet the utopia never became a reality. In 2006 the project was halted indefinitely after it was discovered that the site had languished untouched, following a corruption scandal and financial problems. In 2007, the British magazine, *Ethical Corporation*, named Arup and Dongtan, winners of Greenwasher of the year award for 2007.

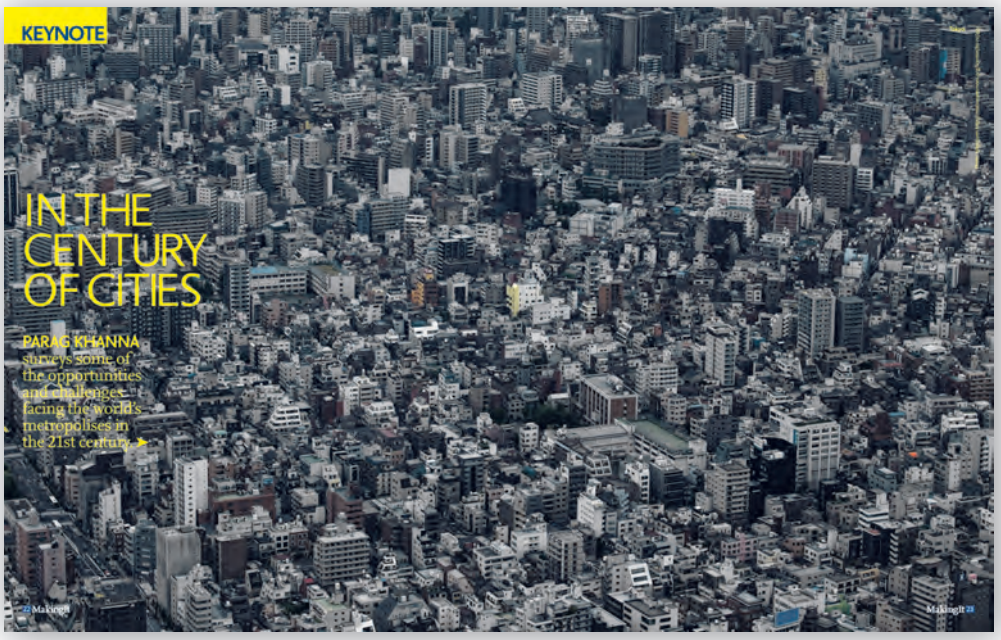
The world's longest bridge and tunnel now connects the building site to Pudong, in outer Shanghai, but the 'Dongtan dream' has been abandoned.

● **Pauline Ffrench, website comment**

React to this?

I haven't seen many editions of *Making It* magazine – have you discussed nuclear power yet? On the one hand I've heard it called a vital low-carbon energy source, on the other hand it's expensive and creates dangerous waste. It would make a good 'hot topic'!

● **Marcus Falco, by email**



Parag Khanna's keynote article ("In the century of cities") in *Making It* number 18. Khanna talked about the need for shared responsibility between the public and private sectors – "what I call hybrid governance", he writes, where industry plays an essential role in building sustainable and inclusive cities.

Learning from misfit subcultures

Alexa Clay argues that we need to learn from the diverse innovators operating in the black, grey and informal economies, and apply some of their ingenuity and pioneering methods and practices to more formal markets.

You think McDonald's invented the franchise model? That was the Mafia. You think live streaming came from TED Talks? That was the porn industry. For the past two years, I've been researching innovation from the fringe in an attempt to understand what we can learn from lesser-known subcultures (e.g., the black market and informal economies, hacker collectives, protest movements, gangsters, hermits and performance artists).

On the one hand, it was an experiencing of getting out of my usual network and building up social capital with fringe outliers and 'others'. On the other, it was a journey into the depths of my own misfit-ness. The results were unexpected.

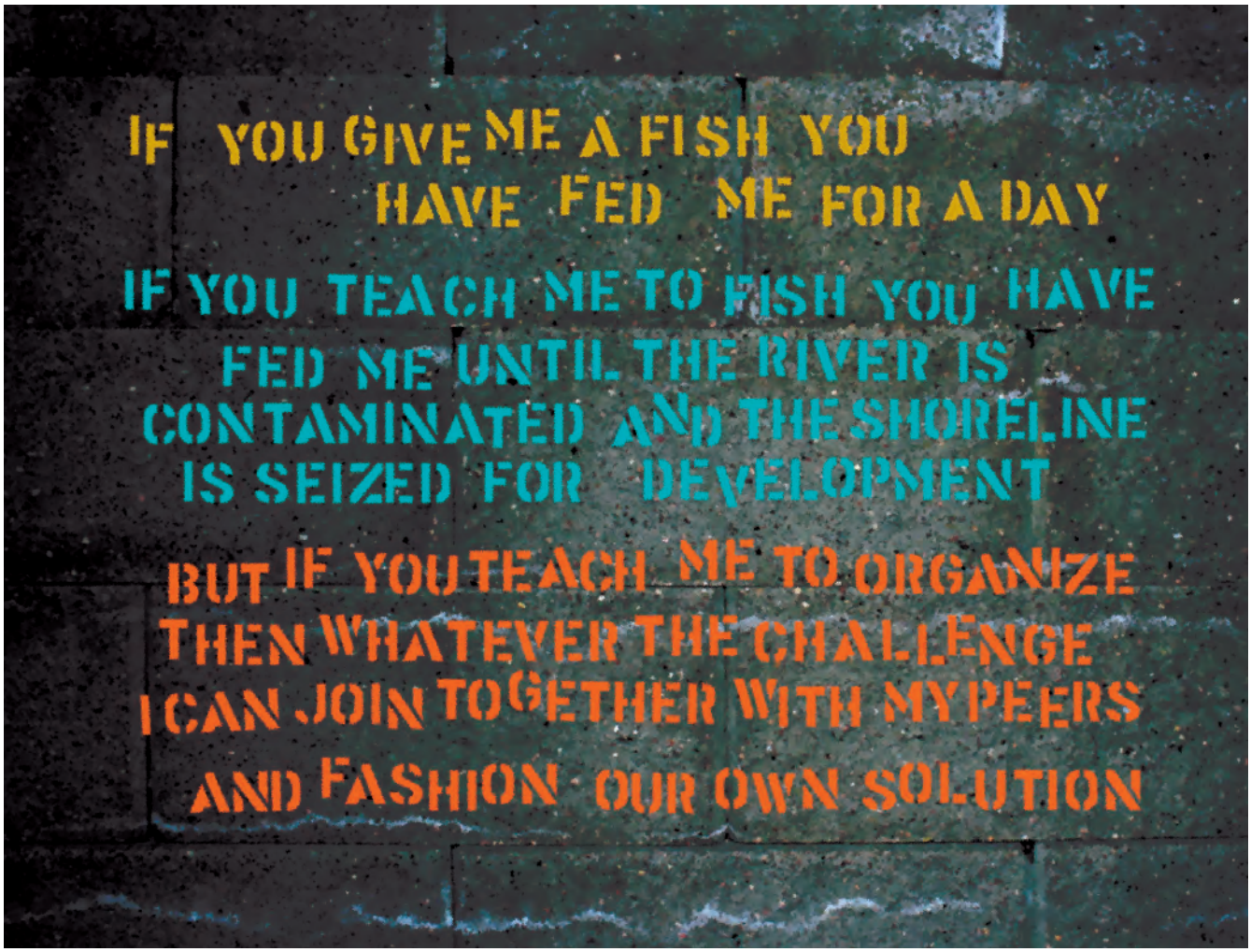
One of my first conversations was with King Tone, the former leader of the Latin Kings, the largest Hispanic street gang in the United States of America. From my conversations with Tone, I learned that gangs were organizations, like any other, that they focused on recruitment and retention, thought about market competition, and had strict hierarchies in place, where members tried to work their way up. From Tone, I also learned about the challenges he faced personally in trying to transform the gang and pivot the organization into more of a benevolent force in the world. Tone's ambition was to transform the soul of the gangbanger – and turn the Latin Kings into a civic movement similar to the Black Panthers. He struggled – like any other CEO trying to transform a massive organization into a force for good.

Tone's journey reminded me a lot of many of the corporate mavericks or misfits I've worked with, as part of the League of Intrapreneurs, changemakers who are developing innovative and scalable solutions to some of the world's most pressing problems, ranging from health to education to the environment. Contrary to social entrepreneurs, they are innovating from within some of the world's largest companies. While it's common to think of misfits as 'outsiders', there are tons of misfits who set up shop within some of our most powerful and mainstream institutions – individuals who are trying to inject a counter-cultural agenda within the giants of mainstream culture.

I've tried to hedge my bets by working with misfits on the inside of institutions, while also spending plenty of time engaging with fringe subcultures. There's a lot that the mainstream economy can learn from the governance models of Occupy or Anonymous, and that traditional entrepreneurs can learn from the habits of hermits and the Luddites (the 19th-century English textile workers who protested against newly developed labour-economizing technologies). Creating these types of bridges between fringe and mainstream culture is critical.

Take Defy Ventures. Defy looks to take the leadership and hustle skills of ex-convicts and plug them into formal entrepreneurship opportunities through an incubator programme. This is an example of creating an effective pathway for misfits to take to join the mainstream economy.

ALEXA CLAY is the co-author of *The Misfit Economy*, the best-selling book that argues that lessons in creativity, innovation, salesmanship and entrepreneurship can come from surprising places: pirates, bootleggers, counterfeiters, hustlers and others living and working on the margins of business and society.



All too often, many misfits may find themselves marginalized or occupying a territory as the "lone, misunderstood outsider." It can be extraordinarily powerful to peel off from society and be outside the system. You often gain fresh perspective and have greater freedom to experiment. But at some point, you have to ask, how can I mainstream my misfit vision? How can I bring more of myself into my work life and relationships?

"It can be extraordinarily powerful to peel off from society and be outside the system. You often gain fresh perspective and have greater freedom to experiment."

Misfits who are able to mainstream often have an incredible entourage of support – a community or tribe of friends and champions: think of Andy Warhol's Factory or Ernest Hemingway's Paris set in the 1930s; both communities fostered new norms and pushed the boundaries of society. Our formal institutions are leaving misfits behind. It's time we created more neo-tribes – more networks of those with unorthodox ideas to challenge status quo thinking.

HOT TOPIC

Sustainable development in the climate change era

From New York…

In this interview, **Professor Pavel Kabat**, Director General of the International Institute for Applied Systems Analysis (IIASA), argues that science needs to stay as a partner at the policymaking table, crossing disciplines and sectors and synthesizing knowledge to create efficient, sustainable solutions

What is special about the way IIASA addresses global grand challenges?
Systems thinking – meaning you look into a problem and try to understand the feedbacks, not only across the different scientific disciplines and economic sectors, but also in a global and regional and local context. Then, look into co-benefits and possible synergies, but also conflicts.

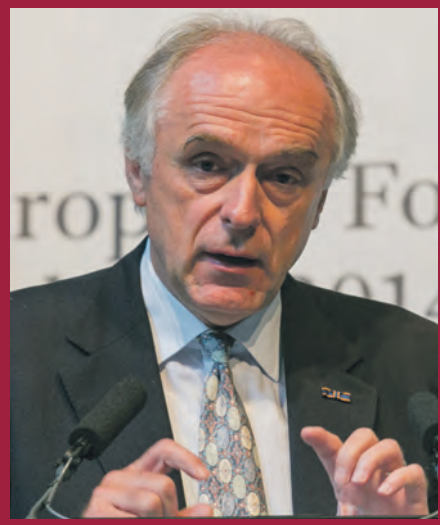
For example, in 2012 we launched the Global Energy Assessment around the questions: Can we have full energy access by 2030 or 2050 for two billion people? At the same time, can we double the rate of renewables in the energy mix across the world, and in particular regions and countries? And can we double the efficiency of energy systems?

These are good questions from the energy point of view, but we said, let's include the 2 °C climate target along with standards for air pollution and health. The study became the first to show that when you work toward these four together – energy, climate, air quality and health – you can save about 40% of the costs, or roughly US$80bn annually.

The World in 2050 is a new project aimed at developing integrated, science-based approaches to achieving the just-minted Sustainable Development Goals. How will the project benefit the Sustainable Development Goals?
The 17 goals the UN Assembly adopted are all sectoral – there is a goal for energy, a goal for water – so people will start to compete for investment. Putting together integrated cross-sectoral implementation is one of the most important paradigms behind the World in 2050 project. The whole idea is to prevent the global system from misinvesting again.

Let me give you an example. When we put up the energy outlook two years ago, it was based on assumptions that the oil price would remain above US$80 per barrel. What happened two years later? We went down to US$40. You can imagine what happened to the investment packages. Science could have [helped], but science was forced to leave the stage much too early. What we're proposing here is a long-lasting partnership, where we'll be able to not only provide the framing of long-term scenarios but also be able to recalculate when environmental or financial or other conditions change. It's partnership thinking, where science is not prescribing but partnering to help the implementation process.





Photos: www.flickr.com/photos/iiasa

The SDGs offer an opportunity to make a major fundamental global transition to sustainability. Science for the first time ever is offering a sustained partnership for many years to come. And that partnership is grounded in a realization that goals in isolation cannot lead to successful implementation. We need an integrated, knowledge-based transition.

What is the biggest obstacle the World in 2050 project faces, and how do you plan to overcome it?

The absolutely biggest obstacle is the terribly siloed system we are part of – not as much anymore in science, but at the level of the global governance and institution structures. To really break through that – to convince, for example, the environmental ministry of Country 1 to talk to the minister of water in the same country to produce an investment portfolio for goals 7 (Energy) and 6 (Water) together – that's a major thing. If we don't have that transformational change in the institutional and financial governance in this important process of implementing the development goals, we will terribly misinvest and mistarget.

Let's discover the co-benefits. Let's show the numbers. We're sometimes running around like headless chickens, well-meaning but yet forgetting that when you start a half-a-billion [dollar] water project in a sub-Saharan African country, you're missing out badly because you are not checking at the same time for possible synergies and competition with the water needs of other sectors. This is not a way to do big transitions.

As a scientist, what made you want to work at the interface of science and policy?

It's partly a kind of frustration. We see there is much more known than the policymaking process is willing and able to absorb and/or use. We believe we've got to make major steps towards a global transition on the climate before it is too late. But we also genuinely believe that we can turn upside down and change the fundamental paradigm, namely, that sustainable and environmental issues – such as climate change or transitions to a decarbonized world – actually present huge opportunities, as opposed to threats, to economic development. We believe that transitions can actually be economically and socially beneficial, and this needs to be better communicated to the policymakers.

What gives you hope?

I was in New York for the UN General Assembly and the adoption of the SDGs, and we were part of everything. There were 100 heads of state; I attended a meeting with more than 40 mayors of global leading cities and many other political side events.

Then I went to this concert in Central Park with 80,000 people from across the world. Ninety percent of them were of the young generation. The way they responded, the energy that was hanging around there, that gave me the most hope of the whole New York happening, much more than sitting in the assembly with heads of state and shaking hands with them.

HOT TOPIC

… to Paris

Interview with **Christiana Figueres**, who, as executive secretary of the United Nations Framework Convention on Climate Change (UNFCC), is responsible for leading the way to an international agreement at the United Nations conference on climate change in Paris in December 2015

How would you define success in Paris, and what are the obstacles to success?
To me, the heart of the challenge is, how do you decouple Gross Domestic Product from greenhouse gas emissions? How do you support developing countries to bring their population out of poverty in a low-carbon, high-resilient way? If that is mapped out in Paris, and if the financial support for developing countries to be able to follow that path is made evident, then I think we have success.

On that final night in Paris, what do you anticipate to be the issues that are still being discussed and negotiated?
Clearly, one of the very difficult issues is the financial support for developing countries, because there's not necessarily full agreement on what is going to be recognized as financial support. Financial flows occur without necessarily being tagged – this is climate finance or this is not climate finance – so it's much more complex issue than we thought. Despite this complexity, we do have to get to the point where developing countries feel there is going to be enough financial support for them to make this huge technological leap we are hoping they are going to make.

The Intergovernmental Panel on Climate Change – IPCC – says that on current emission trends the world will use up the carbon budget for limiting global warming to 1.5 °C in under a decade. Is 1.5 °C still politically possible?
It's going to be very difficult for countries to commit to a specific temperature today because there are many factors that are going to affect that. I think what is absolutely critical is to set the destination, the collective intent. And, frankly, it should be about reaching the balance between emissions we will have to put out because they're unavoidable and the natural absorptive capacity of the planet. If we can reach that balance by the second half of the century, then we will have obtained the ultimate objective. I don't know that it is possible to say right now are we going to end up with 1.5, 1.6, 1.7, 1.8, 1.9 °C. But it's got to be within that range. There is no doubt that it has to be below 2 °C.

Treaty, protocol, legal instrument, outcome of legal force: Does the legal form of the text emerging from the Paris talks matter? What level of 'bindingness' should the agreement have?
Contrary to the Kyoto Protocol, this legal instrument that is being built here will not have one level of legal 'bindingness'. I don't think that the whole [Paris] agreement is going to have the same legal nature, but rather there will be several components that will have different legal nature.

We've got the Papal encyclical, the divestment movement, the growth of renewables, early evidence, as you've said, that emissions can be now decoupling from economic growth. Given external events, could the world tackle climate change without the UNFCCC?
It is already tackling climate change, right? You see both public and private capital shifting, and that is exactly what needs to happen in order to change the economy. Would that capital have shifted without a UNFCCC process? Maybe – but not now. What the UNFCCC process does is first to raise the voice of urgency: There is only a small window in time that will allow us to tackle climate change. And the second part that I think is absolutely critical, and very unique to the UNFCCC process, in addition to the urgency, is the fact that this has to be done in a way that not only responds to the forces of the market and the development of technology, but protects the most vulnerable. That would not occur without the UNFCCC.

Has the introduction of carbon budgets by the Intergovernmental Panel on Climate Change (IPCC), back at the end of 2013, been helpful?
What it has done is reminded everyone that we do have planetary boundaries. That is why we have a sense of urgency, because we only have a limited budget. And it is a budget for the rest of the history of mankind. That is a daunting concept to even begin to incorporate into decision-making. So, in that sense, I think it has brought a sense of realism and a sense of urgency into this discussion.

Given the difficulty over the comparability of methodologies, baselines, emissions



Photos: www.flickr.com/photos/lisboncouncil

data, etc., how meaningful and accurate can the formal assessment of the Intended Nationally Determined Contributions – INDCs – later this year truly be?
We will be looking much more at trends and the aggregate impact of the INDCs rather than into the INDCs of specific countries. What we have here is a fruit salad. We have apples, we have pears, and we even have bananas. So that is our responsibility to lay bare the diversity in the approaches of the INDCs.

At the same time, I can already tell you that if you put the numbers together of the INDCs we already know that that first set do not get us to 2 °C. That is why there is a very important part of the Paris agreement that truly reflects that [this] set of INDCs is the first contribution, but it is not the last. Paris needs to look at both the very short term, which is the pre-2020 emissions; the medium term, which is the INDCs; but also the long term, because Paris is an agreement that is going to be accompanying us and guiding emissions for, perhaps, the next couple of decades.

In September we had the Sustainable Development Goals agreed, and they include both a climate goal and an energy goal. How do you keep the UNFCCC and the SDG processes complementary?
It is only at the level of the processes that these two things are running in a parallel. At the level of countries, there is no difference. I was recently in Egypt and Egypt is very interested, as is Morocco, in increasing renewable energy. Now, is that sustainable development, or is that an answer to climate change? Frankly, it's both. From a Moroccan or Egyptian perspective, what they're doing is increasing their energy security and decreasing their dependency on the import of fossil fuels. If you want to say that is to do with sustainable development, well, yes, but it also has to do with climate change.

Now, fortunately, or unfortunately, there are two processes in the United Nations. The SDGs say, "What kind of society do we want to have in 20 to 30 years?" It's an aspirational, visioning exercise, with metrics, which is good. In the climate convention, what is agreed here is legally binding. They are two legally and procedurally two different processes that are very complementary and, from the countries' point of view, are not to be divided.

From the planetary perspective they also completely go hand in hand for the following very specific reason: If we do not address climate change in a timely fashion, we will wipe out all the development gains that have been made in the past 15 to 20 years. We will severely threaten any further development and growth, particularly in developing countries. And we will condemn the populations that are most vulnerable doubly, because they are already vulnerable and we would be condemning them to huge impacts from which they may not recover.

trends

There are 1.8 billion young people living on the planet – with approximately 85% of them living in developing and emerging economies and in fragile states. In many countries (especially in Africa and South Asia), youth make up nearly a third of the population.

Young people account for roughly 40 percent of the world's unemployed and are up to four times more likely to be unemployed than adults. The International Labour Organization projects that the situation will get worse in most developing and emerging regions. One-third of young people worldwide can be described as NEETs – Not in Education, Employment, or Training. The incomes of as many as a third of young people who are employed are below national poverty lines. One in four young people in the world cannot find jobs paying more than $1.25 per day. (Solutions for Youth Employment – S4YE)

The world faces a looming and potentially calamitous "cold crunch", with demand for air conditioning and refrigeration growing so fast that it threatens to smash pledges and targets for global warming.

Worldwide power consumption for air conditioning alone is forecast to surge 33-fold by 2100 as developing world incomes rise and urbanization advances. Already, the United States uses as much electricity to keep buildings cool as the whole of

BUSINESS MATTERS

The capture of growth in emerging economies

The emerging economies, Brazil, China, India, Indonesia, Mexico, Russia, South Africa and Turkey, have come to be considered the economic powerhouses of recent decades, fostering a narrative of the growth of the South. Not only have these countries managed to reduce poverty; most have embarked on a steep economic growth path and play an increasingly influential role on the global scene.

But an emphasis on growth masks another worrying trend. According to Civil Society Networks – BRICSAM, all eight countries occupy the top ranks as some of the most unequal countries in the world. The price these countries – and millions of their citizens – pay for this is high. Excessive inequality hampers development prospects: negatively impacting growth potential, threatening poverty reduction, leading to mass migration flows and 'brain drain', and reducing opportunities for young people. Inequality affects all aspects of a person's life and life chances, from health and education to

Shops and slum buildings in front of a modern office building in Mumbai, India.

Photo: Panos/Fredrik Naumann

living environment and prospects for old age. Extreme inequality perpetuates high levels of violence and crime, fuels mistrust and undermines social cohesion.

It is now clear that the gains of economic growth in the eight countries have been captured by the very richest. Fortunes have been made by large corporations engaged primarily in the extractives, agribusiness, infrastructure, media and telecommunications sectors. The capture of power by economic elites, including companies, drives inequality by ensuring the rules remain rigged in favour of the rich, who grow increasingly influential.

This concentration of wealth and power in the hands of the few is clearly at the expense of the many. It reinforces existing social structures, perpetuating inequality and excluding millions of people from an equitable share in prosperity. Despite the growth in these economic miracles, more than 2.3 billion people in these eight countries are still living on less than US$5 a day.

Africa uses on everything; China and India are fast catching up. By mid-century people will use more energy for cooling than heating.

And since cold is still overwhelmingly produced by burning fossil fuels, emission targets agreed at the international climate summit in Paris risk being blown away as governments and scientists struggle with a cruel climate-change irony: cooling makes the planet hotter.

Cold has quietly become a part of 21st-century life, certainly in advanced economies: people expect air conditioning to make homes, offices and cars comfortable (and many cities habitable); most food in the developed world is chilled or frozen; medicines, including vaccines, need refrigeration; industries such as steel, chemicals and plastics depend on cooling; deprived of cold, data centres – and the internet – would collapse in minutes. (*The Guardian*)

Heat stress is more than simply being hot – it's a combination of heat and humidity measured by something called the wet bulb globe thermometer (WBGT). When this measure reaches 25°C, humans star to experience dizziness, nausea and fatigue. If it goes much higher – 10°C or so – heat stress could actually kill you.

Verisk Maplecroft's 2016 Climate Change and Environmental Risk Analytics examines the likely impact of heat stress on labour productivity in South East Asia, economies which are dependent on manufacturing, agriculture and construction, as well as other activities, such as refining, that are highly exposed to heat stress. Most countries can expect a significant rise in the number of heat stress days in the future. As a result, South East Asia as a region could lose 16% of current labour capacity over the next three decades. (Verisk Maplecroft)

The most entrepreneurial country in the world is...?

Asked to name the most entrepreneurial country in the world, most people would probably say the United States. But according to Global Entrepreneurship Monitor (GEM) data analysis, top of the table is Uganda.

Even within Africa, Uganda is not the first nation associated with the next big thing in business or technology. Traditionally, South Africa has been the continent's hotspot for startups, while recently it's been Nigeria and Kenya setting the pace for incubators and investment. Uganda didn't win the GEM's top entrepreneurial slot because the nation is on the verge of the next big tech boom, it won because GEM's evaluation used a very back-to-basics definition of entrepreneurship.

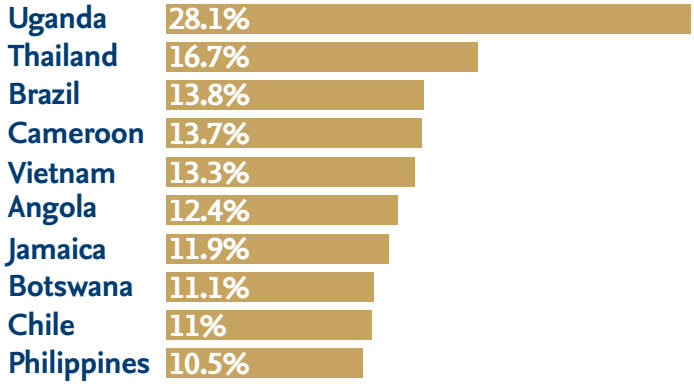
According to GEM, an entrepreneur is anyone who owns or co-owns a small business, which has paid its employees' salaries for more than three months but less than three-and-a-half years. This definition makes a good point: entrepreneurship is about identifying needs and taking a risk. It may not be the best proxy, but it's a perfectly fair metric, and a reminder of the core elements that make one an entrepreneur.

If one accepts that GEM's measurement system has merit, then one has to acknowledge the bustling entrepreneurial spirit of Uganda, where 28% of the work force has started a business in recent years.

Photo: Reuters/James Akena

Making clay stoves at a workshop near the Uganda capital Kampala.

THE TOP 10 MOST 'ENTREPRENEURIAL' COUNTRIES*



*(by % of people starting their own business in the last 42 months)

Photo: UNIDO

Trainees at UNIDO-supported workshops in the Selam Vocational College in Addis Ababa, Ethiopia, learn to maintain and repair heavy-duty equipment and machinery.

Does gender equality contribute to growth?

In UN Women's report, *Progress of the World's Women 2015-2016: Transforming economies, realizing rights*, the authors argue that improving substantive equality for women and realizing their human rights require a rethinking of macroeconomics

Macroeconomic policy typically focuses on raising the level of Gross Domestic Product (GDP) as its primary policy goal, with the expansion of GDP (growth) used as a measure of economic progress. However, broader economic and social outcomes may be more important to improving the lives that women and men are able to lead, including through enabling good health, access to education, decent employment opportunities, freedom from violence and a secure place to live.

Alternative frameworks for evaluating progress – such as human rights or human development – emphasize what people are able to do or become in the course of their lives. Increases in GDP are important only as a means to better social outcomes, including greater gender equality.

Researchers and policymakers have started to pay greater attention to the relationship between gender equality and economic growth. For example, recent evidence on the relationship between gender inequality in education and GDP levels and growth suggests that more equality in schooling is positively associated with GDP, at least for lower- and middle-income countries. Reducing inequalities in schooling and raising the average level of women's education appears to support better economic performance, as measured by GDP per capita, and enhance individual productive capacities.

Comparing the figure for the ratio of female-to-male secondary school enrolment against per capita income, illustrates the positive relationship between the level of GDP and gaps in educational attainment. The ratio increases with average income, but as it approaches parity the relationship flattens out. This indicates that the relationship between the secondary school enrolment ratio and per capita income is different for low-income and high-income countries. As a general rule, greater equality in education is associated with higher levels of GDP. However, at ➤

Photo: ILO/Gudrun Jevne

Contributions from participants during product standards training at Nahr El Bared.

European Year for Development: July – Children and youth.

Photo: ILO

Photo: ILO/Apex

A woman works on her computer at a services office of a local telecommunication company.

➤ lower income levels there is also considerable variation in the female-to-male ratio of secondary school enrolment among countries with similar incomes, suggesting that factors other than average GDP are important. For example, Burkina Faso (US$1,435) and Rwanda ($1,312) had similar levels of per capita income in 2011, but the ratio was significantly higher in Rwanda than Burkina Faso. This shows that even at lower levels of GDP it is possible to attain gender parity in education.

The figure does not tell us whether it is economic growth that raises the enrolment ratio or whether it is greater gender equality in secondary education that supports higher incomes. And focusing on the female-to-male enrolment ratio gives an incomplete picture in terms of substantive equality, because it does not control for the quality of education that young women and men receive or differences in retention and attainment.

Similarly, an increase in the female share of labour force participation, or a reduction in the gap between women's and men's labour force participation, has been shown to result in faster growth. Women's labour force participation rates are typically lower than men's – in some cases significantly so – and women working in paid employment are often concentrated in low productivity activities in which earnings are low. These patterns of segregation indicate an inefficient allocation of labour in which women are prevented from participating in activities in which they may be more productive. Therefore, relaxing gender constraints in labour markets can be expected to raise average incomes and growth rates.

Gender equality may also contribute to growth through its long-term impact on human development. Evidence shows that a mother's education and health status have a positive impact on the health of her children. This can contribute to future economic growth.

However, the reverse can also be true: when other indicators are used, gender inequality (rather than equality) seems to contribute to economic growth and macroeconomic performance, at least in the short term. Women frequently earn less than men and therefore gender wage gaps can reduce average labour costs. Research on emerging market economies in Asia, Europe and Latin America suggests that higher wage gaps boost competitiveness when women are disproportionately employed in labour-intensive export-oriented activities. Gender inequalities in wages can thus contribute to the success of export-oriented growth and improve a country's position with respect to its trade balance in the short term. Because it is premised on inequality, however, such growth cannot be considered inclusive; and in the long-term, gender equality may be more beneficial to growth through its impact on women's human development, such as improvements in educational attainment.

Photo: Chau Doan/UNIDO

Women construction site workers in Vietnam.

The unequal gender division of labour, in which women perform a disproportionate share of unpaid care and domestic work, can also support GDP growth as currently measured. Many benefit from women's unpaid labour, including care for others, performed in households. Firms, for example, rely on the human resources that are produced and sustained through such work. The unequal distribution of the costs of care therefore supports economic growth, since those who benefit from these investments in the next generation do not pay the associated costs.

Overall, the evidence on the relationship between economic growth and gender equality or inequality is mixed and the causal relationship can be unclear. Does gender equality contribute to higher rates of growth? The World Bank has examined this relationship and concluded that improving gender equality is 'smart economics', that is, it contributes to growth and economic development. In fact, whether greater gender equality or greater gender inequality is associated with economic growth depends on the specific indicator used. Measurements of equality that emphasize women's productive activity or attributes – such as narrowing of the gaps in labour force participation and educational attainment – are generally associated with faster growth. In contrast, when the indicators are based on the returns to women's productive activity, such as wage rates, gender inequality can contribute to growth.

Conversely, it is often assumed that economic growth will lead to greater gender equality. But growth that is predicated on enhancing global competitiveness by reducing costs can actually reinforce gender inequalities by lowering labour costs or transferring the costs of unpaid care and domestic work to women. In addition the benefits of growth may be distributed in such a way as to reinforce the existing patterns of economic power, gender hierarchies in employment and patriarchal norms. For example, the welfare arrangements under the Republic of Korea's development strategy from the 1960s to the early 1990s, a period of rapid growth, depended on households and families to provide care services rather than on government programmes financed by taxation, reinforcing a highly unequal gender division of labour.

Gender equality is an important goal in its own right that cannot be seen as purely instrumental to economic growth. For macroeconomic policies to advance substantive equality, they need to look beyond economic growth and include a broader set of goals and targets.

● Excerpt from *Progress of the World's Women 2015-2016: Transforming economies, realizing rights*. UN Women (New York, 2015). http://progress.unwomen.org

The industrialization of Africa is the necessary catalyst for the continent's sustainable development. To attain the Sustainable Development Goals (SDGs), it is critical that Africa's industrial ambition be driven by combined strategies at national and regional levels to ensure real growth and economic prosperity.

Africa's industrialization has always been on the radar of the United Nations. I recall that the United Nations dedicated the years 1980-1990 and, more recently, 1991-2000 as the first and second Industrial Development Decades for Africa. These steps reflect the committed support of the global community to Africa's industrial vision. But we are all aware that expectations for Africa's industrialization have fallen well below targets, for a variety of reasons.

Our job, therefore, is to learn from the lessons of these failures and shortcomings so that the next attempt under the SDGs will meet with better results. Accordingly, we must renew this commitment together for ownership in delivering the next targets in the context of the SDGs. We need to collectively mobilize the support of the national and international institutions, not least the private sector and investment initiatives towards achieving the goal of advanced industrialization of Africa by 2030.

The African Union has equally taken a strong lead in supporting African countries in the quest for industrial progress on the continent. It is from this perspective that African leaders at the African Union Summit in January 2015 adopted the *African Union Agenda 2063 – The Africa We Want*. This plan for transformation is geared towards the growth and industrialization of our economies, based on development of local resources. In addition, the *Action Plan for the Accelerated Industrial Development of Africa* is the core for the industrialization vision for the continent.

Africa is determined to achieve a set of actions for the sustainable industrialization of the continent, taking full advantage of its rich endowment of natural resources. Of great significance is the long standing commitment of African leaders to advance regional integration in Africa as an overriding vision.

To this effect, Nigeria is strongly committed to advancing the accelerated implementation of the African Union Programme for Infrastructure Development in Africa as a vehicle to deliver industrialization to our continent.

For us in Nigeria, we are placing emphasis on the diversification of our economy using small and medium-sized enterprises, energy and mining sectors and agro-allied industries. Specifically, we can attest to the viability of small businesses to boost growth and create more jobs for the youth, and to serve as the precursor of full industrialization.

Nigeria and many other African countries are facing power shortages which have impacted negatively on our growth potential. Industrialization cannot take place without reliable energy infrastructure. We are, therefore, working on a comprehensive overhaul of our power industry.

For industrialization to be attained, Africa must adopt practical policies and strategies. We need to safeguard the interest of local production in an era of rampant globalization. We also need to enhance regional and cross border cooperation.

We in Nigeria commend the good work of United Nations Industrial Development Organization (UNIDO) through its inclusive and sustainable industrial development plan for developing countries, and the African Union for providing a framework for implementing decisions.

Finally, I call on all African countries, development partners and the organized private sector to embrace collaboration for Africa to achieve full industrialization by 2030. This is our ticket to shared prosperity.

Agenda 2030 and the industrialization of Africa

Nigeria's President **Muhammadu Buhari** on what needs to be done

Photo: UNIDO

This statement was delivered by President Muhammadu Buhari at the event, 'Operationalization of the Agenda 2030 for Africa's industrialization', co-organized by the United Nations Industrial Development Organization, the African Union Commission, the Office of the Special Advisor on Africa, and the UN Economic Commission for Africa. Held during the United Nations SDGs Summit (25-27 September), the event brought together African leaders, heads of relevant UN organizations and key development actors to discuss partnerships for Africa's industrialization, particularly as related to SDG 9 on "resilient infrastructure, inclusive and sustainable industrialization, and innovation".

Defeated in the last three elections, Muhammadu Buhari achieved a historic victory in Nigeria's presidential election on 28 March 2015, becoming the first opposition candidate to defeat an incumbent. Previously, he ruled Nigeria from January 1984 until August 1985, taking charge after a military coup in December 1983. Buhari's 20 months as military ruler are remembered for his campaign against waste and corruption, and he retains a reputation for honesty among Nigeria's politicians.

Welders at work at the Chanimetal shipyard in Kinshasa, Democratic Republic of Congo.

Photo: Tim Dirven/Panos Pictures

INNOVATION FOR INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT

Illustration: www.istockphoto.com/portfolio/cherezoff

LI Yong, the Director General of the United Nations Industrial Development Organization (UNIDO), argues that mutually reinforcing technology and manufacturing will deliver economic growth and job creation without polluting the environment. ➤

➤ I think we can all agree that the large majority of countries in the world that have reached a high stage of economic and social development have not done so without having developed an advanced industrial sector. Yet I think we can equally agree that prosperity is still very far from being achieved throughout the world and that remarkable differences remain – unacceptable differences I would say – between and within regions, countries and societies. This is because too many times in the past, economic growth has occurred without providing the opportunity of participation and reward to significant segments of the population, and women and youth in particular.

And we cannot be blind to the fact that, for many countries, a discomforting side-effect of industrialization has been its considerable environmental footprint. Wherever we turn, hardly any country in the world has fully resolved such challenges as waste management, or air and water pollution. In the past, and still today, people had to choose between industrial growth and safeguarding the environment. I am of the opinion that only a profound transformation of production processes and business models – going hand-in-hand with the right choice of technologies – will offer lasting solutions to the daunting environmental challenges of our times.

The challenges we face may seem formidable but we should take heart from what we have already been able to achieve, bearing in mind that these achievements appeared equally daunting only a few decades ago. In the relatively short span of twenty years, the proportion of people living in extreme poverty has declined by half at the global level. In developing regions, the proportion of people living on less than 1.25 dollars a day fell from nearly 50% in 1990 to a little over 20% in 2010, five years earlier than the deadline set by the international community under the Millennium Development Goals. Over the same period, the proportion of undernourished people across the globe fell from 23% to 15%.

Challenges ahead

Given the right decisions, and with the right mix of financing and innovative technologies, we have proved ourselves able to tackle challenges that had appeared intractable for centuries. This is not to say that our journey has ended, nor should we be blind to the challenges that lie ahead of us. Despite these great achievements, more than a billion people worldwide still live in extreme poverty, and many more experience hunger and are vulnerable to economic or environmental shocks. Undernutrition remains one of the world's most serious but least addressed public health challenges. Nearly one-third of children in developing countries are underweight or stunted (in terms of low height for age), and undernutrition contributes to one-third of all child deaths.

"Only a profound transformation of production processes and business models will offer lasting solutions to the daunting environmental challenges."

It is for this reason that, as Director General of UNIDO, I travel the world to strongly promote the notion of inclusive and sustainable industrial development, or ISID in short, because I firmly believe that it is only through ISID that the central challenges of our world can be reconciled, namely the eradication of poverty within the next generation and the safeguarding of the world's natural resources for the coming generations. We base our effort to promote ISID on our conviction that mistakes made in the past may be corrected through a strong and concerted effort to promote structural transformation and the application of the most modern and suitable technologies in the present and future.

Agenda 2030 and Sustainable Development Goal 9

We at UNIDO are surely not alone in undertaking this journey. After the positive experience of the Millennium Development Goals, the world

community has recently embarked on a new and even more ambitious endeavour under the heading of the 2030 Agenda for Sustainable Development, which aims at a comprehensive transformation of our world. This new 2030 Agenda is inspired by both the ambition and the realism to tackle the world's development challenges in a new, holistic and universal manner, and is built on the foundation of 17 Sustainable Development Goals, or SDGs. It is clear that we will only be able to find effective long-term solutions to ending poverty, inequality and environmental disruption if all nations, regardless of their income level, work together to implement the SDGs in an integrated manner.

The 2030 Agenda promotes a society where every country enjoys sustained, inclusive and sustainable economic growth and decent work for all. A world in which consumption and production patterns and the use of all natural resources – from air to land, from rivers, lakes and aquifers to oceans and seas – are sustainable. One in which democracy, good governance and an enabling environment at national and international levels are essential for sustainable development, and in which development and the application of technology are climate-sensitive and respect biodiversity, and are resilient.

"I see goal number 9 as particularly relevant because it recognizes the inseparable link between innovation and industrialization…"

From my vantage point, I see the Sustainable Development Goal number 9, "Building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation", as particularly relevant, not only because of its explicit reference to innovation but also because it recognizes the inseparable link between innovation and industrialization in sustaining growth, enhancing inclusiveness and promoting environmentally sustainable development.

While there may have been some debate in the past, I remain strongly convinced that the manufacturing sector remains critically important in both the developing and the developed countries. In the former, it continues to provide a pathway from subsistence agriculture to rising incomes and living standards. In the latter, it remains a vital source of innovation and competitiveness, making significant contributions to research and development, exports and productivity growth. In both cases, technological change represents the key ingredient to the simultaneous achievement of ambitious targets in terms of sustained growth, inclusiveness and environmental sustainability. Technology and manufacturing mutually reinforce each other and create the conditions for a virtuous circle of growth and development.

Why the link between manufacturing and innovation?

The manufacturing sector continues to be the hub for innovation and technological change. It is a proven fact that Research and Development expenditures are concentrated especially in the manufacturing sector. Technology innovation and economic growth are closely related and can be represented as cycles or waves. Each wave represents a diffusion phase of technology innovations creating entirely new manufacturing sectors and thus supporting opportunities for investments and growth.

The current wave began in the 1990s and relies mainly on information systems. These have tremendously modified the transactional environment with new methods of communication and more efficient forms of management of production and distribution systems. Technological innovations have dramatically changed how goods are created, transported, distributed and consumed. Information technologies in particular are playing a greater role than ever in manufacturing and the value chains in which they are embedded. The expansion of global value chains (GVCs) and their related ➤

➤ commodity flows has led to a change in the respective value of research and development, fabrication and marketing. The actual fabrication or production stages of GVCs are becoming relatively standardized and subject to lower returns, while the pre-production and post-production segments are the areas where relatively high levels of value added are concentrated.

What innovation for ISID?

According to a McKinsey study, mobile Internet usage will be particularly disruptive in the coming years by generating a global economic impact that will increase from US$3.7trn at present, to US$10.8trn per year by 2025. About half of this impact could materialize in developing countries, where 3.5bn people will have access to the Internet by 2025. The creation of new technologies with so huge a market potential will be translated into the development of new and highly profitable business opportunities as well as the creation of additional jobs.

There are two sides to the information and communications technology (ICT) coin: its production, where UNIDO is providing its expertise, and the consumption or use of this technology. The latter refers to the impact that the use of ICT is having throughout societies, which is an important source of productivity growth. We are working with the International Telecommunications Union (ITU) to enhance our collaboration in innovation pertaining to ICT production and use. I strongly believe that such a partnership between our two organizations, which share a strong expertise and knowledge in a common area, promises to bring considerable benefits to developing countries. More generally, creating partnerships is the way to go in a world that is becoming increasingly complex and generating the many development challenges we face in our daily work.

Green industry

Beyond these information technologies that are changing production processes and helping to reduce poverty in different parts of the world, new technologies have been emerging to reconcile growth and environmental protection. These new technologies are useful for green industries and in particular help us to:

1) Increase the efficient use of materials, water and energy in industrial production, through such approaches as the dematerialization of products and value chains, the use of materials with a longer service lifetime, and the replacement of virgin materials with recycled materials

2) Minimize the generation of wastes and emissions through such approaches as improvements in process operation, monitoring and maintenance, and waste minimization;

3) Minimize the risks associated with chemicals and hazardous wastes through such approaches as the sound management of chemicals, the phasing out of toxic and other environmentally harmful substances (including those contributing to the depletion of the ozone layer and/or climate change), and the application of Best Environmental Practices and Best Available Techniques to prevent hazardous pollutants.

“Mobile Internet usage will be particularly disruptive in the coming years by generating a global economic impact that will increase from US$3.7trn at present, to US$10.8trn per year by 2025.”

The rise of these new technologies is creating new industries producing environmental goods which are necessary for the greening of industries. Structural transformation is gradually taking place with a progressive increase in the use of decarbonized inputs in the manufacturing process.

According to the Global Trends in Renewable Energy Investment 2015 report published by the United Nations Environment Programme, the past year brought a rebound of green energy investments worldwide with a surge of 17%

to US$270bn. A key feature of the 2014 result was the rapid expansion of renewables into new markets in developing countries. Investment in developing countries, at US$131.3bn, was up 36% on the previous year and came close to overtaking the total for developed economies, at US$138.9bn. Wind, solar, biomass and waste-to-power, geothermal, small hydro and marine power contributed an estimated 9.1% of world electricity generation in 2014, compared to 8.5% in 2013.

Renewables

This increase in the installed capacity of these renewable sources is equivalent to a saving of 1.3 gigatonnes of CO2. It is also important to note that many of the new technologies that harness renewables are, or soon will be, economically competitive with fossil fuels. Dynamic growth rates are driving down costs and spurring rapid advances in technologies.

"Countries can continue their quest for growth and job creation without having to resort to environmental pollution."

Despite these impressive improvements in the adoption and diffusion of environmentally friendly technologies at world level, there is no guarantee that the current pace of pollution, and in particular of greenhouse gas emissions, will lead to an environmentally sustainable path. The twenty-first Conference of the Parties in Paris provides a unique opportunity for countries to define a concerted action to match the well-known 2 degrees temperature increase limit set by the Copenhagen consensus. A global problem such as climate change needs a globally coordinated response, together with effective national domestic actions to give a massive impulse to the diffusion of environmentally friendly technologies which are necessary to achieve inclusive and sustainable industrial development. Many environment-friendly technologies are still expensive and their diffusion still needs to be induced by emissions reduction policies. The further increase of the scale of production of these technologies will also reduce their adoption costs.

Producing more with less

As recognized worldwide, UNIDO is very active in the areas of energy and environment. Essentially, our technical cooperation projects in these areas aim to increase energy and resource efficiency, that is, we assist countries in producing more with less. Perhaps it is controversial to say this but the "old" or traditional view maintained that there was a choice between economic growth and environmental sustainability. Several studies have provided evidence of the existence of a so-called Environmental Kuznets Curve (EKC), very similar to the original version of the curve which demonstrated the tension between growth and income distribution.

However, let me provide a slightly different view. There is, first of all, a trend towards the decoupling of energy and resource intensity and economic growth. This is a significantly positive development that UNIDO has contributed to for decades. But another important aspect is the solution to environmental concerns that technology provides, and coupled with that the entire new industry that has been created to supply the world with products such as solar panels, wind mills and other forms of energy infrastructure. So, in line with the notion of structural transformation, countries can continue their quest for growth and job creation without having to resort to environmental pollution. There are technologies that allow for old industries to become "greener" and, importantly, there is an emergence of new industrial sectors producing new "green" products. Through these developments, countries can advance from old-style "brown" production processes to green production and green jobs. Yes, the good news is that we can indeed have it both ways!

OVERCOMING ENVIRONMENTAL SCARCITY AND INEQUALITY

Edward B. Barbier outlines a balanced wealth strategy

EDWARD B. BARBIER is the John S. Bugas Professor of Economics at the University of Wyoming. His new book, *Nature and Wealth: Overcoming Environmental Scarcity and Inequality*, has just been published by Palgrave MacMillan.

Pope Francis's encyclical Laudato Si (Praise Be to You) has created headlines worldwide for identifying environmental destruction and global inequality as the "two evils" afflicting humanity today.

My latest book, *Nature and Wealth: Overcoming Environmental Scarcity and Inequality*, similarly argues that the world economy today is facing two major threats:

- increasing environmental degradation, and
- a growing gap between rich and poor.

Drawing on historical and contemporary evidence, I argue that these two threats are symptomatic of a growing structural imbalance in all economies, which is how nature is exploited to create wealth and how it is shared among the population. The root of this imbalance is that natural capital is underpriced, and hence overly exploited, whereas human capital is insufficient to meet demand, thus encouraging wealth inequality.

Our economic wealth consists of three main assets: reproducible capital, human capital and natural capital, which also includes ecological capital. Along with financial assets, economic wealth comprises the overall wealth of countries, which is often referred to as national wealth. In recent decades, financial capital has become the dominant form of wealth, and more of the income and wealth of the rich is from the financial sector. Moreover, its unchecked expansion has led to greater financial risk and instability, increasing concentration of wealth and global imbalances. Reproducible capital continues to be overly resource and energy-intensive, and is the main conduit for skill-biased technological change. As a result, accumulation of reproducible

Photo:UN/Rick Bajornas

Pope Francis addresses the General Assembly during his visit to the United Nations headquarters in September 2015.

capital encourages more use of natural capital and rising demand for relatively skilled labour.

However, human capital accumulation in modern economies is failing to keep pace with this demand, which has caused the wage gap between highly skilled and less-skilled workers to grow. The global implications are increasing wealth inequality, pockets of poverty, structural unemployment, and increased social polarization.

Finally, the underpricing of natural capital has led to increasing over-use and excessive environmental degradation. The result is increasing ecological and natural resource scarcity, and the emergence of global environmental problems, such as climate change and concerns over freshwater availability.

Structural Imbalance and Wealth in Modern Economies

One reason for this imbalance is that the current structure of production in the world economy has been mainly determined by the second phase of innovations of the Industrial Revolution. These innovations occurred from 1870 to 1900, and were based largely on electricity and the internal combustion engine, which were in turn made possible by the new hydrocarbons oil and gas, along with coal. Harnessing these technological and economic changes eventually led to the rise of the United States, which became the model for 20th century industrialization. As industrialization spread worldwide, fostered by trade in energy and resources, there was a large boost to global productivity, which lasted until the 1970s.

This second phase of the Industrial Revolution was also an outcome of the fossil fuel era. Since the 1890s, coal, oil and gas have accounted for at least half of global energy consumption. And, despite the rise in renewable energy and nuclear power, fossil fuels still account for 80% of energy use worldwide. In addition, as economies became more energy-intensive during the second phase, they also increased non-renewable material use, such as minerals and ores, construction materials and nonrenewable organics, which currently comprise 95% of material consumption.

Two long-term trends that accompanied the second phase of industrialization have occurred since the early 20th century: skill-biased technological change and increased resource and energy use. Both trends are fundamental to understanding the structural imbalance that has arisen since the 1970s.

Moreover, economies today are exacerbating this imbalance. We hide the rising costs of increasing environmental scarcity by continuing to underprice natural and ecological capital. And, rather than investing in sufficient human capital to keep pace with skill-biased technological change, we allow skilled labour to become scarce and thus attract excessive wages. It seems that we are prepared to accept the economic and social consequences of excessive environmental degradation and rising wealth inequality.

To address the current structural imbalance we must tackle these twin problems of excessive environmental degradation and insufficient human capital, which I call a Balanced Wealth Strategy. This strategy also needs to include policies aimed directly at benefiting the large number of resource-dependent economies and ending the significant pockets of poverty found worldwide. In addition, global market failures – climate change, ecological scarcity and declining availability of water – need to be addressed as well.

Consequently, the four key elements of the Balanced Wealth Strategy are:

- Ending the persistent underpricing of natural capital that leads to its over-use in all economies.
- Ending insufficient human capital accumulation that contributes to increasing wealth inequality.
- Adopting policies targeted at inefficient natural resource use and poverty in developing economies.
- Creating markets to address key global environmental impacts.

The Balanced Wealth Strategy is clearly not costless, and will require substantial commitments by all economies. But unless such a strategy is pursued, and the world economy makes the transition to a new era of innovation and growth, the current global threats of environmental scarcity and inequality will continue to worsen.

In sum, this offers two possible visions of the future, one in which the second phase malaise persists and one in which the world economy enters a third phase of innovation, sustainable growth and economic prosperity. Making the transition will not be easy, but the consequences for the majority of the world's population of the current pattern of using nature to accumulate wealth could be bleak, if not catastrophic.

Pope Francis is right to call attention to the two "twin evils" afflicting humanity today.

● *This article was originally published by Triple Crisis.* www.triplecrisis.com

Photo: Arne Hoel / World Bank

Photo: Arne Hoel / World Bank

Entrepreneurship is a tool

Fadi Ghandour wants to inspire, empower and connect entrepreneurs in the Middle East and North Africa

Social injustice and marginalization, economic exclusion, and the need for job creation were among the key drivers of the Arab Spring. Citizens in many Arab countries, especially the youth, were frustrated by the lack of economic opportunities and high unemployment rates. As a matter of fact, youth unemployment is the most critical economic challenge facing the Middle East and North Africa (MENA) region today and the statistics are as plain as they are disconcerting. According to the International Labour Organization, at least 28% of youth in the Middle East and 30% in North Africa are without jobs. Many are also forced to work informally, while others are underemployed.

It is becoming very clear that the quest for a better future with economic and social inclusion has become a priority for Arab citizens, and we can no longer ignore the fact that improving economic outcomes and increasing the levels of economic equality are key elements in promoting social justice in the Arab region.

One important strategy that has proven its success in overcoming such deficiencies in many international settings is entrepreneurship since it can be used as an effective tool for job creation, wealth generation and social well-being.

How entrepreneurship can help

Entrepreneurship can actually be a very effective tool for the development of our societies. If nurtured well and unleashed, it could help address one of the region's hitherto most elusive developmental goals: to craft and sustain a decent life through decent jobs for their citizens.

The MENA entrepreneurship ecosystem has indeed grown tremendously in the past few years; however, small businesses still face many challenges in growing and creating jobs. Unless the region's economies nurture healthy startup ecosystems, many businesses will not be able to realize their potential to provide sustainable jobs.

One effective model that can serve as a successful example of how entrepreneurial ecosystems can be accelerated entrepreneurship can be supported across the MENA region is Wamda.

Wamda is a platform of programmes and networks created to utilize core competencies in community development, media, and research. The platform constantly engages with young, innovative and promising entrepreneurs so that they can start and create their own businesses; in addition to rolling out services for corporations and governments to integrate them into the ecosystem and link them to startups.

Entrepreneurs need to be equipped with relevant information and content that inspires and educates. They also need a stage to spotlight their achievements and get promoted so that they can take off. Through different texts and multimedia, the Wamda website – Wamda.com – provides this and also ensures that the rest of the world is kept up-to-date on the most important ecosystem developments shaping entrepreneurship in our region.

In the last four years, around 10,000 posts were published, featuring over 2,000 entrepreneurs, stories, announcements and insights of tech entrepreneurs in the region, creating the largest body of digital content about startups throughout the MENA region.

Photo: www.facebook.com/WamdaME

Photo: www.facebook.com/WamdaME

FADI GHANDOUR is the founder of Aramex, a FedEx-like logistics company in the Middle East, Africa and South Asia. Three years ago, Ghandour stepped away as Aramex CEO to become vice-chairman, and now spends much of his time helping entrepreneurs. He is currently Executive Chairman of Wamda Capital.

for social inclusion

Building communities

On another front, Wamda's community programme brings together different players working with startups around the region. Through its signature event, Mix N' Mentor, the team catalyzes dialogue between the MENA region's most promising young startups and its leading investors and business professionals.

From Casablanca to Cairo, Amman to Kuwait, and Beirut to Dubai, Wamda has so far organized 25 Mix N' Mentor events, hosting over 1,500 attendees and 300 regional and global mentors. The main mission is to help build a culture of mentorship critical for supporting entrepreneurs as they strive to scale-up.

Furthermore, to analyze and assess the ecosystem developments, the Wamda Research Lab (WRL) carries out studies and projects on different facets of the region's entrepreneurship ecosystem with a goal to create new data and thought-leadership in this space. Findings and insights from the reports produced by the WRL help keep the Wamda community up-to-speed on the main trends and challenges influencing entrepreneurship development in the MENA region.

Wamda is also working on bringing governments and corporations into the region's entrepreneurship equation. These players' importance to entrepreneurship development in the MENA region cannot be understated and their involvement can come in many forms.

As an example, Wamda has recently entered into a partnership with General Electric to create MEMakers, a microsite to feature entrepreneurs who are making critical changes within the regions' advanced technological industries.

Through this partnership, we are seeing companies who are pushing the envelope, not simply in creating jobs but also in helping them access new technologies to promote more equitable development throughout the region. Additionally, we're creating relationships between the MENA region's leading entrepreneurs and GE employees to foster knowledge exchange and unlock resources.

When it comes to working with governments, Wamda built Nuwait, a project with the National Fund for SME Development in Kuwait to lay the groundwork for the country's entrepreneurship ecosystem.

Projects such as these help begin the conversations on who a country's leading entrepreneurs actually are, why they are important and how ecosystems can grow to support them. Such initiatives are critical for spurring a culture of entrepreneurship in nascent ecosystems. Governments have a vital role to play in supporting entrepreneurs and to do so they must ensure that a culture that embraces risk and experimentation is alive and well in their countries.

On a higher level, there is the recently launched Wamda Capital, a fund that invests in early and growth-stage technology and technology-enabled companies in the MENA region; focusing mainly on Jordan, Egypt, Lebanon and the Gulf Cooperation Council countries. The aim is to help overcome the major obstacle of the insufficiency of venture investments for the region's entrepreneurs who want to grow and scale their businesses.

Photo: www.facebook.com/WamdaME

Making the difference

Today, we are witnessing youth in the MENA region turning into changemakers and entrepreneurs who are making the challenges of their own societies into market opportunities, and they are making a real difference. Unless we work with, empower and enable them, we will be missing the opportunity of tapping into the youth resource as potential drivers to socio-economic and essentially human development in the Arab world.

Wamda is one institution that is sharing the responsibility with the youth to develop a better inclusive future for all by building a healthy and capable entrepreneurial ecosystem that can serve as a bedrock for development, change and empowerment.

Diversifying the economy

The Republic of Mauritius is an island nation in the Indian Ocean about 2,000 kilometres (1,200 miles) off the south-east coast of the African continent. Since independence from the United Kingdom in 1968, Mauritius has developed from a low-income, agriculture-based economy to a middle-income diversified economy, based on sugar, textiles, tourism and financial services.

Mauritius is one of the world's top luxury tourism destinations. It possesses a wide range of natural and man-made attractions, a tropical climate with clear warm sea waters, attractive beaches and tropical fauna and flora. These tourism assets are its main strength, especially since they are backed up by well-designed and run hotels, and reliable and operational services and infrastructures.

The country has no exploitable natural resources and therefore depends on imported petroleum products to meet most of its energy requirements. Local and renewable energy sources are biomass, hydro, solar and wind energy. Dependence on imports of food and fuel results in large current-account deficits.

In the 1970s, as a response to the problems of high unemployment, low levels of foreign exchange reserves and high dependency on a mono-crop economy, the authorities adopted an export-led growth strategy. A system of Export Processing Zones (EPZs) was introduced to provide incentives meant to stimulate foreign direct investment (FDI) and the transfer of know-how and technology into the country. The initiative proved to be highly successful, and, by the end of the twentieth century, over 500 companies were operating in the EPZs, employing over 90,000 workers, representing around 30% of the total workforce. Clothing and textiles displaced sugar as the dominant exports, with manufacturers taking advantage of duty-free market access under the European Union's

Above: Panorama of Port Louis, Mauritius.

Below: Woman harvesting sugar canes in field, Mauritius.

Photo: istock.com/Tarzan9280

At a glance

Government: Following elections in December 2014, a government was formed by the three-party Alliance Lepep coalition, led by Sir Anerood Jugnauth, the prime minister. The members of the coalition are the Mouvement socialiste militant (MSM), the Parti mauricien social démocrate (PMSD) and the Muvman Liberater.

Head of State: Ameenah Gurib-Fakim, the first female president in the history of Mauritius, was sworn in to the largely ceremonial post on 5 June 2015.

Population: 1.26m (mid-2014) – Mauritius is the most densely populated country in Africa

Languages: French, English, Creole, Bhojpuri, Tamil, Hindi, Urdu

Religion: Hindu (52%), Muslim (17%), Christian (30%)

Composition of GDP by sector of origin: agriculture: 4.5%, industry: 22.4%, services: 73.2% (2014 est.)

Ranking in the World Economic Forum's Global Competitiveness Report 2015 in sub-Saharan Africa: 1st

Ranking in the World Economic Forum's ICT Network Readiness Index 2015 in sub-Saharan Africa: 1st

Photo: istock.com/Tarzan9280

Below: Mauritius street view with vendors at their shopping stalls.

Photo: istock.com/irenetinta

Interim Economic Partnership Agreement and the US African Growth and Opportunity Act.

Although Mauritius has a substantial manufacturing sector outside the EPZs, comprised of industries processing soap, sodas, flour, candles and shoes to supply the domestic market, in recent years, the authorities have made efforts to diversify the country's "four-pillar" economy. Information and communication technology (ICT), seafood, hospitality and property development, healthcare, renewable energy, and education and training have emerged as important sectors, attracting substantial investment from both local and foreign investors. As top international universities and growing numbers of medical tourists are attracted to its shores, Mauritius is beginning to realize its potential as a regional knowledge hub. State-of-the-art infrastructure and a young, bilingual population have helped it develop into one of Africa's top centres for ICT.

Despite international economic uncertainties, positive Gross Domestic Product growth rates have been registered. However, Europe still accounts for around two-thirds of Mauritius's exports and a similar proportion of tourist arrivals, as well as being a major source of investment. The economic slowdown in the Eurozone will affect growth rates.

Inequality is growing in Mauritius and relative poverty increased from 8.5% in 2007 to 9.8% in 2012. Per capita income growth for the poorest 40% of the population has lagged behind the national average in recent years. As a result, the size of the middle class has shrunk and vulnerability to falling back into poverty has increased. The World Bank states that efforts are needed to raise the quality of the education system, including the vocational sub-system to cater to private sector development needs and reduce skills mismatches. The Bank is also calling for a better coordination between sectors such as education and health, and for active labour market programmes to better tackle chronic poverty and facilitate the reintegration of those left behind.

Mauritius's main challenges include increasing competitiveness through greater regional integration, creating a stronger environment for innovation, making growth more inclusive by addressing a scarcity of skilled human resources, and bolstering resilience to natural disasters and climate change.

Interview with **President Ameenah Gurib-Fakim**

'We need to embrace science, technology and innovation'

What inspired you to pursue a career as an ethnobotanist?
Actually, I did not intend to go into ethnobotany. I got drawn to ethnobotany while I was still following my passion for chemistry. I returned home to Mauritius with a PhD in organic chemistry and realized that I could not do organic chemistry the way I was used to so I started exploring plant chemistry and eventually discovered the beauty of ethnobotany. Ethnobotany examines the relationships between people and plants, and links culture, traditions, and the sciences. It is a short cut towards the discovery of new potential biologically active molecules from natural sources that can be used in modern medicine, as well as in other fields.

As President of Mauritius what issues are you focusing on?
As President, I am limited by what the constitution allows me to do. But I think there is still a place to focus on issues that are important for the country. I am very keen to drive the science, technology, and innovation agenda, which can be transformative for any economy. After all, the difference between the North and the South is the science gap.

What is the most promising research being conducted currently at CIDP, the research centre you founded?
At CIDP, we are focused on the development of innovative ingredients for the cosmetic, pharmaceutical, and nutrition sectors using plant resources. This approach is entirely new in Mauritius, where academic research has been published on the subject but never translated into a business.

What are Africa's biggest challenges in increasing research output?
Africa is reported to produce only 1.1% of global research. One of the reasons for this low output has been the fact the local governments have not prioritized research and development as a prime mover of the economy. Fortunately, things are changing, and if you look at research output for the past five years, you will see that output in the health sector has increased dramatically. This can be partly attributed to the inherent disease burden in Africa. Increasingly, governments are prioritizing science, technology, engineering, and math education, and I am confident that in the next few years, this landscape will begin to change.

What policies need to be put in place in order to create an autonomous and sustainable scientific research community in Africa?
Research has been happening on the African continent, albeit on a smaller scale than in other regions and driven mainly by donor funding. However, some countries

PRESIDENT AMEENAH GURIB-FAKIM has a background in chemistry and ethnobotany. After earning her PhD in chemistry from Exeter University in the United Kingdom, she returned to her native Mauritius in 1987 as a professor at the University of Mauritius. She left the university in 2010 to open a research centre, Centre International de Développement Pharmaceutiquem (CIDP), where she served as managing director. The CIDP conducts research on the medicinal, nutritional, and cosmetic uses of plants. She was appointed to the ceremonial position of President of the Republic of Mauritius by the National Assembly, and took office on 5 June 2015.

President Ameenah Gurib-Fakim speaking at the opening of the African Ministerial Conference 2015: Intellectual Property for an Emerging Africa, on November 3, 2015, in Dakar, Senegal.

Photo: © WIPO 2015. Photo: Cheikh Saya Diop

are doing better than others. One of the reasons for this is the availability of funds. Other reasons include the need for expanded infrastructure in Africa as well clear government vision. If governments matched funding for donors, for example, and had clear research and development policies, scientific research would be more sustainable.

How do you emphasize the importance of biodiversity to the international community?

Biodiversity underpins life on earth. Tropical regions, like Mauritius, are known to be especially diverse and have provided a wealth of information and resources to the medical, nutritional, and cosmetic sectors. Biodiversity hotspots, which constitute just 2.3% of the Earth's land surface, account for an estimated 35% of ecosystem services. Threatening this biodiversity is undermining our own existence.

How has climate change effected Mauritius and what is being done to diminish its effects?

Mauritius, just like any other island state, will be impacted by climate change. We are already being impacted by climate change. We have witnessed sudden torrential rains, more dangerous cyclones with winds exceeding 200 kilometers per hour, and increased temperatures during the summer. In my opinion, these are symptoms of a warming climate. The question is, how do we adapt? We need to access the appropriate technologies, increase awareness about climate change, and develop a policy of preparedness. It is an expensive process and I hope that my country, like other island states, will benefit from the appropriate support of other nations in the development and implementation of our adaptation strategy.

What obstacles have you faced as a woman in a male-dominated field, and what advice would you give young girls and women pursuing science careers?

There are indeed many obstacles to being a woman in science. However, when one develops a culture of quality and excellence, there is no limit to what a woman can do. Quality and excellence transcend gender. Also, never give up in the face of adversity, learn to always dare and take risks.

What are your hopes for the future of Mauritius?

My wish for my country is that it continues to operate as a well-governed country where peace and social justice prevail. It is important to diversify the economy so that more and more opportunities are created for the young people. One of the ways to help make it happen is to embrace science, technology and innovation.

● *This interview, conducted by Chelsea Skojec, is republished with permission from* Earth Island Journal *http://www.earthisland.org*

GOOD BUSINESS

In the latest in the series about remarkable companies, *Making It* profiles **Mouna Abbassy**, the 33-year-old of Moroccan origin who launched her beauty brand, Izil Beauty, in the United Arab Emirates in 2013

Izil Beauty

"Izil" means "pure" in the Berber language.

For a start-up gaining a strong foothold in the highly competitive cosmetics industry is a tall order, but Mouna Abbassy and her husband have created a niche and successfully tapped into the lucrative organic cosmetic market in the United Arab Emirates (UAE) by offering high-quality beauty products that draw on authentic age-old Moroccan traditions.

Abbassy moved to Dubai 10 years ago to start a career as a marketing professional for multinational cosmetic brands. Identifying the untapped market for organic cosmetic products made of argan oil and other rare natural ingredients, she saw an opportunity to utilize the Moroccan beauty rituals that she grew up with.

Argan oil, which is produced from the kernels of the argan tree that grows in the otherwise barren lands of south-western Morocco, is one of the rarest oils in the world and is hailed as the "liquid gold" of Morocco. It is said that, since the 13th century, the Berber people of North Africa have been making argan oil for culinary and cosmetic purposes.

Today, as the beauty industry has woken up to its moisturizing and anti-ageing effects, and as nutritional intervention studies have vigorously tried to prove its beneficial effects on health, argan oil is the latest obsession of the US$430bn personal-care market world-wide and is in high demand. According to Moroccan government data, the country's exports of argan oil have more than doubled in the past five years, to more than 700 tons, much of which has gone to skin- and hair-care product-makers such as L'Oréal and Unilever.

Despite the demand, the method of making argan oil has changed very little. For centuries, Berber women have been engaged in the arduous and time-consuming tasks of collecting, drying and shelling the plum-size argan nuts, in order to obtain the kernels. The kernels are then crushed and ground in a handmade mill to release the oil. With this traditional method, it usually takes one woman 16 hours, using about 30 kilograms of argan fruits, to produce one litre of oil, which can sell for around US$400 in beauty boutiques worldwide.

Mouna Abbassy (opposite), winner of the 2015 Cartier Women's Initiative Award for the Middle East and North Africa region.

Ambassador for Moroccan beauty traditions

As a Berber herself, Abbassy grew up eating salad and couscous mixed with argan oil. She was used to seeing local women using natural ingredients including argan oil for skin and hair-care. But it was not until she moved to a foreign country that she started to sense the great business opportunities that this oil could provide.

"I noticed that women were shifting from the sophisticated skin-care products to natural and organic skin-care products. Market research companies say that for the past 20 years the market for natural beauty products has grown at an average of 11% every year, and that in the UAE natural and organic products remain niche but have 'significant' growth potential."

Meanwhile, the multi-cultural environment in Dubai stirred her entrepreneurial nature. In a recent interview she said, "Entrepreneurship has always been in my blood and I have always dreamed of creating something of my own…Seeing so many different cultures (in Dubai) made me value my own culture and heritage.

Photo: https://commons.wikimedia.org/wiki/User:Chrumps

Therefore, I decided to realize two dreams: building my own business and serving as an ambassador for my beloved country," she said.

In 2013, Abbassy launched her own brand "Izil Beauty" – "izil" meaning "pure" in the Berber language. She chose to manufacture her products in Morocco to help preserve her homeland's culture, as well as to increase employment among the Berber community. So far, fifteen Berber women are working full-time for Izil Beauty.

Like all start-ups, the beginning was not easy. Although a strong background in marketing with global cosmetic corporates, including L'Oreal, gave Abbassy a head-start, the skill-set she had acquired was not enough to qualify her to run a business of her own. So, in order to gain a thorough knowledge of the cosmetic industry and to improve the formulation of the products, she participated in a one-year intensive programme on the development of cosmetics products, both organic and non-organic. To ensure her products are pure, safe and have a longer shelf-life, she persuaded her suppliers to improve hygiene and working conditions and to modernize their production processes. To get ideal product shots and images for catalogues, she bought photography materials and took online courses to learn how to use them. To save production costs, she went out to negotiate with numerous suppliers and finally nailed down reliable ones for formulations, packages and labels in Dubai, Morocco and Pakistan.

"We can do it"

"It was a lot of hard work, sleepless nights and juggling between my day job, my personal life and Izil…But the good thing is we got to do everything in our way, which is amazing. It means whatever we feel is the right thing for the business, we can do it," Abbassy said.

She and her husband also took painstaking efforts to bring products from Morocco to the UAE and to register the products with the Dubai municipality. One of the key issues the couple needed to decide was whether to sell the products in shops, in beauty salons, online, or through direct marketing. They did extensive research and found that selling in shops leaves little margin for profit and selling in salons requires too much organizational effort. So setting up their own venture was the preferred choice. To test the waters, they went to many trade fairs to show their products and tried selling them on social media such as Facebook. After receiving positive feedback and achieving satisfying sales, their confidence was boosted and they approached a series of malls with their business plan.

In March 2013, they closed a deal with the Dubai Festival City and opened their first shop there. To-date, Izil Beauty has already expanded operations to four shopping malls in Dubai, and according to Abbassy, other malls are interested. And that is just the beginning. Abbassy aspires to introduce the natural Moroccan beauty recipes to all customers across the globe. She and her husband are working to expand the venture and to launch an e-commerce platform so that Izil Beauty products are easily accessible wherever there is Internet.

In late 2015 Mouna Abbassy won the 2015 Cartier Women's Initiative Award for the Middle East and North Africa region. Speaking on behalf of Cartier International, Florence Marin Granger said, "Mouna Abbassy is rising to the challenge of matching social impact with economic value, and her company can be an inspiration to young female entrepreneurs in the Middle East and North Africa region."

"It usually takes one woman 16 hours, using about 30 kilograms of argan fruits, to produce one litre of oil, which can sell for around US$400 in beauty boutiques worldwide."

Monitoring industrialization: a statistical perspective

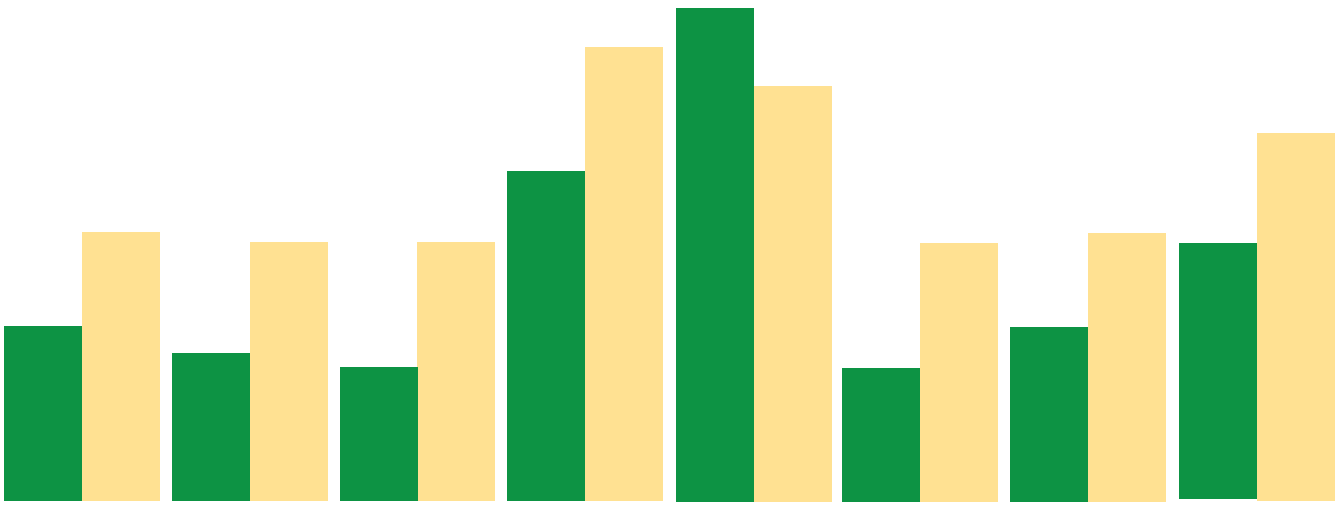
By **SHYAM UPADHYAYA**, Chief of the Statistics Unit, United Nations Industrial Development Organization

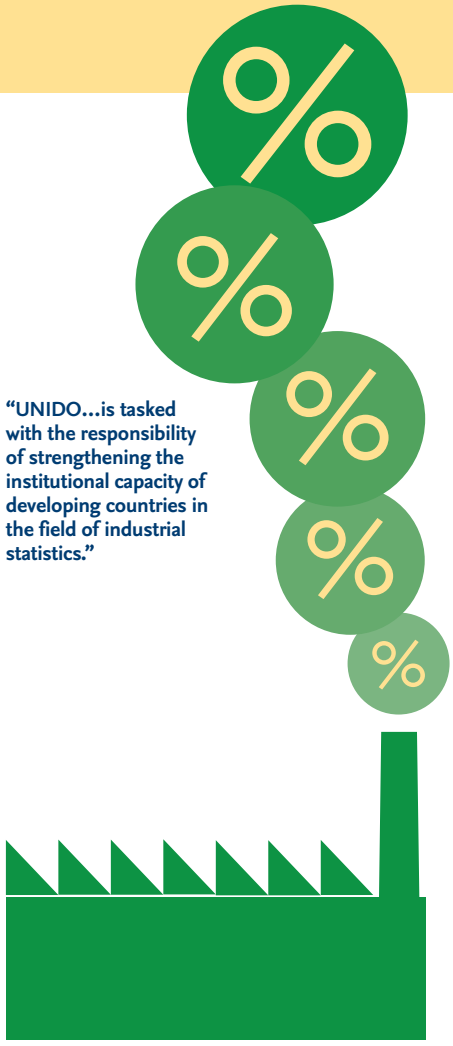
While the adoption of the Agenda 2030 at the United Nations in September attracted wide media attention, the international statistics community has been working behind the scenes to develop a framework of indicators that will help governments and international development partners monitor the progress in achieving the Sustainable Development Goals (SDGs).

At the very outset of the discussions about the SDGs, the United Nations Industrial Development Organization (UNIDO) carried out a statistical analysis and presented sound evidence of the relationship between industrialization and the well-being of society. There is a strong correlation between human development and the level of a country's industrialization. As a country industrializes, it acquires the resources necessary to improve people's living conditions. With an increase of manufacturing value added (MVA) per capita of 1% annually, the proportion of a population that lives below the 'poverty line' decreases by nearly 2%. Similarly, with a one percent growth of MVA per capita, the number of deaths related to armed conflict falls by 4.5%.

Gender inequality is widely recognized as one of the chief factors impeding human development. The UN Development Programmes Gender Inequality Index, i.e. a composite measure reflecting inequality in achievements between women and men in three dimensions: reproductive health, empowerment and the labour market. The Index shows that gender inequality is highest in least developed countries and lowest in industrialized countries.

There are 17 Sustainable Development Goals (SDGs) with 169 targets, whereas the eight Millennium Development Goals (MDGs) had 21 targets. Consequently, the number of indicators to be monitored will be much larger than the 50 MDG indicators. It will be necessary to develop the statistical capacity to produce the data necessary to compile the statistics needed for SDG monitoring. It will require much greater efforts by, and increased resources for, the national statistical offices and international data producing agencies. The challenge is to develop a set of indicators that cover all the targets while minimizing the reporting burden on





statistical agencies. This challenge has been taken up by the international statistical community.

An Inter-agency Expert Group on SDG Indicators (IAEG-SDG), formed by the UN Statistical Commission, is finalizing a global indicator framework (and associated global and universal indicators) to be ready by March 2016. Based on its mandate, UNIDO focuses on the SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. It has five targets, of which three are directly related to industrial development. In this context, as part of the IAEG-SDG, UNIDO proposed a balanced set of indicators that cover the economic, social and environmental dimensions of inclusive and sustainable industrial development.

After a thorough screening process, in October 2015, the IAEG-SDG recommended the following indicators for industrialization under SDG 9:

- Share of manufacturing value added in Gross Domestic Product.
- Share of manufacturing employment in total employment.
- Share of small-scale industries in total industry value added.

"UNIDO…is tasked with the responsibility of strengthening the institutional capacity of developing countries in the field of industrial statistics."

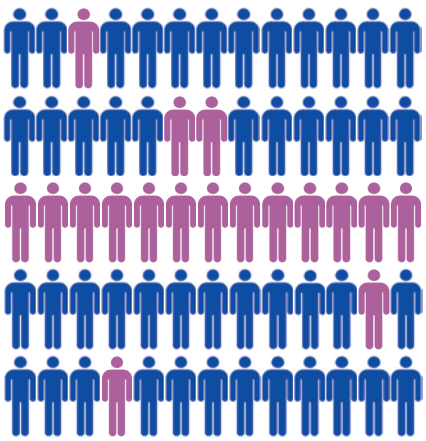
- Percentage of small-scale industries with a loan or line of credit.
- CO2 emissions per unit of value added.
- Share of medium and high-tech industry in total manufacturing value added.

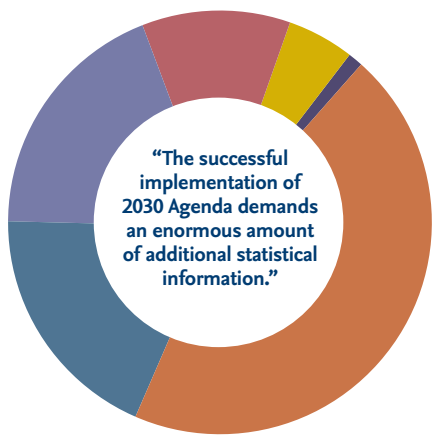
Among the above listed indicators, the economic dimension of industrial growth is represented by MVA. Social inclusiveness is captured by gender-disaggregated employment data in manufacturing. Regional disparities within a country will be revealed by geospatial presentation of production and employment figures, while inequality between countries will be indicated by country data on MVA per capita.

For the purpose of indicating the environmental dimension, a synthetic indicator of the carbon emissions per unit of MVA is proposed. Performance will be dependent on the type of energy sources used, especially whether fossil fuel-based or renewable, the nature of the processing technology, and the amount of residuals proportional to the volume of production.

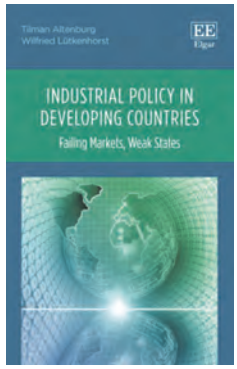
To assess support for domestic technology development, research and innovation in developing countries, UNIDO will monitor the relative shift of countries from low to high-technology industrial sectors.

UNIDO's mandate to maintain global industrial statistics in partnership with the Organization for Economic Co-operation and Development, and the large amount of global industrial data collected by the organization's Statistics Unit, provide a solid foundation for the monitoring of inclusive and sustainable industrial growth. At the same time, the successful implementation of 2030 Agenda demands an enormous amount of additional statistical information. However, although the SDGs are universal goals, in the case of many developing countries there are critical data gaps on some very basic indicators. UNIDO not only has the opportunity to lead the world on inclusive and sustainable industrial development, but is also tasked with the responsibility of strengthening the institutional capacity of developing countries in the field of industrial statistics.





A plea to return to the origins of development thinking



***Industrial Policy in Developing Countries. Failing Markets, Weak States* by Tillman Altenburg and Wilfried Lütkenhorst**

Reviewed by **MICHELE CLARA**, Senior Coordinator, Research and Industrial Policy Advice Unit, United Nations Industrial Development Organization

As a topic long marginalized in the development debate and fiercely opposed by some of the leading organizations in the field, industrial policy has received surprisingly extensive attention over the last few years. As the Nobel-prize winner and former Chief Economist at the World Bank, Joe Stiglitz, phrased it: "There has been a time when 'industrial policies', for both developed and developing countries, were bad words not to be spoken either in public or in private by respectable people." Now these 'bad words' are used a lot more frequently and they seem to have made it all the way to the front cover of books issued by respectable publishers, without even the need for a 'parental guidance' sticker! Indeed, today, the body of literature is large enough that a reader may legitimately ask if anything new can still be said on the topic.

Tillman Altenburg and Wilfried Lütkenhorst have recently joined the club of authors trying to add their insights and views in this debate and, boy, do they have a lot to say. The combination of a well-known academic, based at the German Development Institute, and a long-time international civil servant at the United Nations Industrial Development Organization is surely one of the reasons why the book should be read by a very broad audience of people engaged in development. Only too often these two communities seem to be living on different planets, the former engaged in academic debates, the latter drafting outcome statements at global events, and neither of the two necessarily inspiring or realistic.

"In the weeks immediately following the endorsement of the Agenda 2030 at the UN General Assembly, the book is an uncomfortable but recommended read."

In the weeks immediately following the endorsement of the Agenda 2030 at the UN General Assembly, the book is an uncomfortable but recommended read. In the first three chapters, the authors make it clear that the structural transformation of an economy is far from simple, especially in low-income countries. And if you think these challenges are formidable, just wait until you read about 'sustainability' and 'inclusiveness', two catchwords abundantly used these days but rarely explained as vividly and with as much depth as they are in this book.

The two authors do not shy away from taking positions, with sore punchlines for readers across the entire ideological spectrum. Chapter 6 on why industrial development is such a challenge in low-income countries is likely to raise an equal amount of eyebrows in the orthodox camp (the section on safeguards takes aim at almost all the pillars of the Washington Consensus) as in the structuralist one (the section on policy capabilities provides vivid examples of why industrial policies should be marked with a 'handle with care' stamp). Importantly, none of the above are based either on theorizing or on academic debate. The insights presented in this book are all solidly drawn from practice and research.

In the end, the book delivers pretty much what the reader would have anticipated from the front cover: an outlook into the opportunities and the risks which practitioners in development economics, and even more so the select few working towards structural transformation in low-income countries, will be confronting in their daily work. The authors choose not to be prescriptive in their conclusions: in the final chapter the reader will find neither the proverbial

Amina Mohammed, Special Advisor of the Secretary-General on Post-2015 Development Planning, speaking at a festival during the UN's Sustainable Development Summit in New York in September 2015.

Photo: UN/Mark Garten

'silver bullet' nor a set of ready-to-make recipes but an enlightening list of seven principles to inspire decisions and to assess results.

Despite the numerous hurdles they present in the book and the desperate urgency of the challenges to be tackled, Altenburg and Lütkenhorst never lose hope that transformation and development are possible and that attempting them is nothing short of a moral imperative. The authors aptly choose to end the book with a quotation from Joyce on mistakes and discovery.

Reflecting on the content of the book but also on how complicated it must have been to pack so many years of research and work into little more than 200 pages, a quote from Seneca would have probably been equally fitting: "It is not because things are difficult that we do not dare, it is because we do not dare that they are difficult."

In the now growing body of literature on the topic, *Industrial Policy in Developing Countries. Failing Markets, Weak States* deserves a special place as a disenchanted, at times uncompromising, but never pessimistic plea to return to the origins of development thinking, aiming as big as it gets but also admitting to and learning from the mistakes made in the past. The book hopefully puts the final nail in the coffin of the debate about "whether" industrial policies are needed in poor countries. There is no doubt, however, that a consensus on "how" to design and implement them effectively will be anything less than engaging.

SDGs: five challenges for city leaders

By **PAULA LUCCI**, Research Fellow, Overseas Development Institute

While global leaders were signing the Sustainable Development Goals (SDGs), less noticed was that more than 20 city and local leaders endorsed the SDGs and committed to implementing them in their own cities. This is interesting and encouraging as many of the goals fall within city leaders' responsibilities.

So, let's reflect on some of the challenges that cities in the developing world (those that endorsed the SDGs and others that may decide to adopt them) will face:

1. Lack of good data leaves us in the dark

It may not be the flashiest line of work, but gathering detailed data is the most useful tool for city policymakers to assess their residents' needs – and target their policies accordingly.

However, many cities in developing countries lack essential up-to-date information on subjects like the location and characteristics of their slums, the state of their housing stock or transport network. It was only recently that a project like Digital Matatus made Nairobi's semiformal transit system visible.

Without this data, how can officials say whether they are making progress on Goal 11, that is, to make cities 'inclusive, safe, resilient and sustainable'? How can they know if basic services are reaching their poorest populations, in line with the SDGs' "leave no-one behind' agenda"? How are citizens supposed to hold their local governments to account?

There is growing awareness of the need for good disaggregated data, with a number of initiatives, from a Global Partnership for Sustainable Development Data to citizen-generated data and data collected by slum dwellers themselves looking to fill the gaps.

2. Leaders should pick their priorities from the 169 targets

With 169 targets, city officials need to prioritize. Trying to do too much may result in achieving too little. While this is common sense from a practical perspective, it also leads to a real risk of short-term political calculations giving priority to targets that are easier to achieve, with leaders treating the SDGs as a sort of 'à la carte menu'.

There is only one way to avoid this: civil society groups must keep a close eye on SDG progress and hold city governments to account.

"How countries manage urbanization over the next 15 years will be critical to reducing poverty and environmental sustainability. Ultimately, it will help define governments' ability to achieve the SDGs."

3. Ambition only works if you can finance it

The SDGs have raised the international community's ambition. Estimates of their cost reach the trillions of dollars.

While city governments' responsibilities vary by nation, they are often the ones feeling the pressure of having to deliver basic services – from water and sanitation to affordable housing – while urban populations rise. But the question of how local governments can access new sources of finance, both from domestic and external sources (particularly climate finance), has not yet received the attention it deserves.

4. Local governments face complex challenges – but often lack the capacity to cope

While reforms to devolve power to local governments are under way in many countries, funding and support to improve local government capacity have often trailed behind.

Many local governments, particularly in secondary cities, lack the technical capacity to plan and manage service delivery on the scale needed to manage increasing populations while, for example, negotiating complex contracts with private suppliers on an equal footing.

Unless urban planning capacities are strengthened, cities will struggle to meet the challenges posed by rapid urbanization.

A slum in Manila, Philippines.

Photo: Anton Zelenov

5. Leadership from cities often have a lasting impact beyond them

Change happens when there is political will. If mayors commit to the SDGs because they can see the benefits (including political ones) – or because civil society groups put pressure on them – then we might see results.

There are plenty of examples of ambitious or innovative mayoral initiatives setting a precedent for national policy. *Bolsa Familia*, the celebrated cash transfer programme in Brazil, actually had its origins in *Bolsa Escola*, an initiative from the government of Brasilia. That cash transfer programme was aimed at reducing poverty and inequality, but it was also a key element of the opposition's political strategy.

How countries manage urbanization over the next 15 years will be critical to reducing poverty and environmental sustainability. Ultimately, it will help define governments' ability to achieve the SDGs.

One way to maximize the role of city governments would be to build on the commitments already made by some city leaders and establish a group of cities that frequently monitor and exchange lessons on policies to achieve the SDGs – in essence, a 'Cities for SDGs' network.

Throughout their design, the SDGs have received praise and criticism in equal measure. With the goals now agreed, efforts must focus on implementation – and for that, we need city leaders on board.

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FURTHER READING

Bayrasli, Elmira – From the Other Side of the World: Extraordinary Entrepreneurs, Unlikely Places

Bourguignon, François – The Globalization of Inequality

Cord, Louise; Genoni, María; and Rodríguez-Castelán, Carlos (eds) – Shared Prosperity and Poverty Eradication in Latin America and the Caribbean

Friends of the Earth – The environmental reasons for reducing inequalities

Kabeer, Naila – Why it's time to put gender into the inequality discussion

Klugman, Jeni; Hanmer, Lucia; Twigg, Sarah; Hasan, Tazeen; McCleary-Sills, Jennifer; Santamaria, Julieth – Voice and Agency: Empowering Women and Girls for Shared Prosperity

Krozer, Alice – For Richer or Poorer: The capture of growth and politics in emerging economies

Mimica, Neven – Finishing the Job of Eradicating Poverty

Oxfam International – Even it up. Time to end extreme inequality

Ramdoo, Isabelle – Resource-based industrialization in Africa: Optimizing linkages and value chains in the extractive sector

Stiglitz, Joseph – The Price of Inequality. How Today's Divided Society Endangers Our Future

Suzuki, David – Sustainable development goals offer a path to prosperity

UNIDO – Industrial Development Report 2016. The Role of Technology and Innovation in Achieving Inclusive and Sustainable Industrial Development

FURTHER SURFING

http://blogs.lse.ac.uk/internationaldevelopment – discussion of issues, research, experiences and free-form thinking about international development issues by staff, students and friends of the Department of International Development at the London School of Economics and Political Science

http://ineteconomics.org – The Institute for New Economic Thinking was created to broaden and accelerate the development of new economic thinking that can lead to solutions for the great challenges of the 21st century

http://therules.org – The Rules is a worldwide network of activists, artists, writers, farmers, peasants, students, workers, designers, hackers, spiritualists and dreamers, linking up, pushing the global narrative in a new direction

http://towardsthehumancity.org – Towards the Human City aims to identify, document and communicate initiatives that make significant improvements in the way we think about and manage cities in order to make them more human and inclusive

http://unstats.un.org/sdgs – Official website of the United Nations providing information on the development and implementation of an indicator framework for global monitoring of the post-2015 development agenda.

www.cusp.ac.uk – The Centre for the Understanding of Sustainable Prosperity aims to engage a wide-range of stakeholders in debate and foster practical innovations in pursuit of sustainable prosperity

www.genderanddevelopment.org – *Gender & Development* is the only journal published to focus specifically on international gender and development issues, and to explore the connections between gender and development initiatives, and feminist perspectives

www.wider.unu.edu – The World Institute for Development Economics Research provides economic analysis and policy advice with the aim of promoting sustainable and equitable development for all

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