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3 RETURN TO ECONOMIC DIPLOMACY by Mario Sechi

O AFRICA'S UNSEEN RENAISSANCE by Moisés Naím

12 PRESENT AND FUTURE by Fabrizio Lobasso

18 EUROPE AND AFRICA, THE RESTART by Brahim Maarad

24 AN EYE-LEVEL PARTNERSHIP by Gabriela lacobuta

32 THE HEGEMONY OF THE DRAGON by Giulia Pompili

36 IT ALL STARTS WITH THE ECONOMY by Jean-Paul Adam, Linus Mofor and Mactar Seck

41 GREEN RESOURCES by Rabia Ferroukhi, Laura El-Katiri and Mirjam Reiner

48 THE LEAPFROGGING REVOLUTION by Lorenzo Colantoni and Giulia Sofia Sarno

CONTENTS

54 by Massimo Zaurrini

BEYOND STEREOTYPES by Roberto Di Giovan Paolo

66 URBANIZATION: THE CHALLENGE by Alessandro Lanza

70 CONNECTED AFRICA by Gianfranco Belgrano

76 THE CLIMATE PARADOX by Ruben David

BO COP27: WILL IT BE A TURNING POINT? by Robert Dewar

65 A JUST TRANSITION by San Bilal, Hanne Knaepen and Alfonso Medinilla

90 THE GREEN RECOVERY ACTION PLAN by John Asafu-Adjaye

94 SUSTAINABLE ARCHITECTURE photogallery by Diébédo Francis Kéré

REFUSE

AFRICA IS THE ANSWER TO A MYRIAD OF EMERGED AND EMERGING PROBLEMS, BUT WE NEED TO GO BACK TO STUDYING REALISM, TO SEEK DIALOG AND SINCERE COOPERATION. AFRICA IS NOT A WESTERN DEPOSIT OF RAW MATERIALS; IT IS A PLACE THAT MUST BE UNDERSTOOD, STUDIED AND AFFORDED RESPECT E LIVE IN A TIME OF WAR. We asked ourselves how to make sense of what is happening in Ukraine, the epicenter of conflict among global forces. The easiest (and obvious) choice was to shine the light on the heart of the conflict, in that space called Eurasia: a place both real and imaginary. But the risk in terms of the story was that we would remain inevitably stuck in today and above all be overtaken by events and remain "behind the curve."

We decided to take another path: the path of tomorrow. We found our near future in a "natural place" (which is not by chance also that of our origin; go and watch the touching scene in Luc Besson's film *Lucy*, with Scarlett Johansson, when the



contemporary civilization has "forgotten" the power of demography...

all of us, Lucy, a 3.18-million-year-old woman) where there is life and raw materials, new births and a course of history still to be written, not declining and indeed expanding: Africa.

Since the emergence of the philosophical problem of modern times. The Ouestion Concerning Technology (Martin Heidegger, 1953), contemporary civilization has "forgotten" the power of demography and nature. Thinking he had finally subdued them (with technology and an unlimited dose of deadly hubris), he lost sight of them until the most terrible of events in human history—war, in the heart of Europe—revealed the void that had opened up in our worldview. The Russian war of aggression, the invasion of Ukraine, the Big Bang of the Yalta order, have returned all the pieces on the chessboard back to zero: How can we build the vital space of Europe (security, energy) without depending almost exclusively on Russia, which is only the tip of the iceberg of a "rest of the world" in conflict with the West?

Suddenly, all the angels fell to earth; the illusions we had built on paper collapsed and our sights returned (again) to Africa. But this state of emergency forces us to reflect broadly-and sincerely—on our relationship with the largest and most forgotten continent on the planet. This issue of WE is an exploration of this theme. We start from the subject of our mission, energy, and I will leave it to our exceptional contributors to examine all aspects of the story in the following pages. My task here is instead to try to trace a possible way of thinking with respect to this immense space that cannot simply be a "reservoir" from which to draw resources, which cannot just be a question of commercial agreements, exploration, investments, engineering and logistics. We are on a higher plane.

The system of relations and alliances of African nations has changed profoundly over the last few decades. This too has gone on below deck, as if it were not all in the light of day. What is surprising is the surprise of some and even more surprising is the question: How is this possible? Of course it is possible. In March this year, 17 African countries abstained from the resolution condemning Russia's war in Ukraine, and an-

main character meets in a journey back in time the mother of the document—except Kenya—gave no explanation: diplomatic silence, but still silence. The United States and Europe have expressed disappointment over the vote, but it is precisely this episode that revealed the problem with the West's relations with Africa. U.S. Ambassador Linda Thomas-Greenfield said the U.S. must "do additional work to help these countries to understand the impact of Russia's war of aggression on Ukraine." Help? Understand? Additional work? As Ebenezer Obadare of the Council on Foreign Relations put it, this "not only smacks of hubris, it paints a picture of African countries as moral adolescents who require Western supervision in order to understand and do what is right." My translation: looking down on your neighbor does not work.

> Among the factors that must be taken into account in the analysis of the position of African countries with respect to the war in Ukraine, there is one element of great importance: Abstention is not always and only a question of ties with Russia; for many, the principle applies as expressed in the Non-Aligned Movement (almost all countries members) of non-interference in the internal affairs of a sovereign state. Warning: This is the same principle that China has adopted (and is evoked by Beijing in rejecting any criticism of the Taiwan issue), observer within the Movement and natural ally of developing countries. Behaviors are sometimes irrational; but in most cases, they have logic. It is enough to know, to understand, to observe and not to mistake your own desires for reality.

The reality is that the first contemporary "decoupling" was undertaken by the West with regard to Africa at least three decades ago. The myth of American energy self-sufficiency collided with the geopolitical facts of a world that has turned the page and decided to stop the game, take the ball away and see what happens. Larry Fink, the CEO of BlackRock, the world's largest asset manager, said clearly that this is "an end to the globalization we have experienced over the last three decades." What is the use of having "your own" gasoline if you don't have the microchip that runs the car? As I write this piece, the White House anticipates that the inflation figure for March will be "extraordinarily other eight votes were not registered. And those who supported high" (+8.5 percent, the highest since 1981); there is a global energy problem that was already serious before the war, at the top of the agenda for Western governments.

Africa is certainly the answer (not the only one, but without this piece of the puzzle, everything becomes almost impossible to solve in the medium term) to a myriad of emerged and emerging problems, but we need to go back to studying realism (I strongly recommend the memoirs of Henry Kissinger, starting with White House Years, a monumental and extremely topical work), to seek dialog and sincere cooperation, to take a cold bath of humility. I recall on this point the historical experience of Eni, which, since its foundation under Enrico Mattei, deployed economic diplomacy as a key element in the development of Italy and its African partners, an element of foreign policy in the Mediterranean and Middle East. This work continues, pursued today by the Draghi government in a series of agreements to provide Italy with an alternative to Russian gas supplies. All this is only possible thanks to a quality called credibility. It cannot be bought in ready cash; it is built and consolidated over a long duration and is not independent of the people who take it forward. It is not produced with a machine; there is no technique to replace human relationships, the basis for dialog and respect for the culture of the other.

It is enough to observe Russia's military agreements in Africa (there are over twenty) to realize the impact of this lack of interest and historical prejudice first by the United States and then by Europe. On an economic level, the penetration of China is the other element that has changed the African scenario (and ours) in recent decades. The two endpoints have in the end been joined: Russia and China today often act in tacit coordination on the various stages. France has withdrawn its troops from Mali; another signal that we must connect to the future of the mission to control the Sahel area. In addition to China and Russia, we must also include Turkey's presence in North Africa, for Turkey is an actor with a great imperial culture and history in search of spaces of influence, not just in the eastern Mediterranean, as evidenced by Turkey's key role in Libya.

If you leave the area, someone else occupies it: It's happening in Afghanistan after the American withdrawal; it's been hap- continuous retreat. Europe? Didn't get the message. To this we

pening in Africa for some time. American administrations have always been thinking about other stages: the Middle East, Russia and China. Their political focus was always elsewhere; the last five presidents (Bill Clinton, George Bush Jr, Barack Obama, Donald Trump and Joe Biden) have not had an agenda for Africa and Trump was the only president since Ronald Reagan to never visit Africa.

The headline in Foreign Affairs some time ago: "Beijing isn't just building roads-it's making friends"; and if this is true, then we have to ask ourselves why and, after finding the answer (it's not difficult), begin to ask how much we have done and are doing ourselves. The world is veering towards other balances (and imbalances). We need to correct the course of the West, first of all our way of thinking, our culture, the very philosophical idea of Being in the world (how to be there and why, with what mission?).

In 2004, immediately after the invasion of Iraq, while I was with NATO at the naval base in Norfolk, Virginia, I was recommended a book: The Pentagon's New Map, by Thomas P.M. Barnett, a Naval War College analyst who had devised a new theory visualized in a map in which the world was (is) split in two: the "Functioning Core," linked by economic interdependence, and the "Non-Integrated Gap," without stable leadership, common rules, free from the glue of international trade. The "Functioning Core" in turn was divided between the "Old Core" (North America, Europe, Japan and Australia) and the "New Core" (China, India, South Africa, Brazil, Argentina, Chile and Russia). What were the Disconnected Gap areas? The Middle East, South Asia (with the exception of India), almost all of Africa, Southeast Asia and the Northwest of South America. Twenty vears later, that map presents the same areas of instability, disconnected or not fully integrated into the globalization process. Twenty years later, the United States has withdrawn from Afghanistan, and Russia and China have immediately filled the void in Central Asia. The Middle East speaks a lot of Russian and Turkish, and Africa has become a Chinese and Russian chessboard. If it is not the decline of the West, it is certainly a





If the shopping cart becomes a problem for the wealthy West, imagine what all this means for poor or developing countries. Food insecurity across Africa is a reality



need to add what Henry Kissinger defined in World Order as "non-government areas": States that have sovereignty but are unable to exercise it over the entire territory, are a puzzle of insecurity. These include Syria, Iraq, Libya, Lebanon, Mali, Sudan, Somalia, and watch out for the evolution of Pakistan. Africa dominates this picture of high instability.

How important is the weakness of the religious factor (as a system of culture, root and center of gravity of man, read Notes towards the Definition of Culture by T.S. Eliot) in our story? Very. The other forgotten element is the absent "sacred"; that slow and inexorable decline that René Girard remembers thus: "The crisis of religions is one of the fundamental characteristics of our time. To trace its beginning, we need to go back to the first unification fiber of the nervous system of artificial intelligence: the phe-

of the planet, back to the era of the great geographical discoveries, and perhaps even further back, to the passion that has always driven human intelligence towards 'comparisons'." This is where we find the lost "sacred." It is not a liturgical question; it is the simple truth of the fact that we have stopped comparing ourselves with others.

Setting aside the problem of God (fear of the abyss, our own conscience), we have cultivated extensively the idea of Homo Deus. Now we have taken another leap (backwards). We have passed from a homo-centric system of thought (oh, the illusions!) to intensive cultivation using powerful fertilizers of datacentric thought in which the divine travels along the optical

nomenon that Yuval Noha Harari calls "dataism." You will all remember the period in which tech gurus all over the globe talked in reverent tones about Big Data (which not by coincidence was the echo of George Orwell's "Big Brother") and everything was solved with a number; an obsession examined by Paolo Zellini in La dittatura del calcolo (The Dictatorship of Calculation). All back down to earth, again. Even this myth of a new age of humanity founded on the server has fallen: The Silicon Valley network has been revealed as disconnected from reality; the veneration of the machine totem has evaporated; we have learned that you cannot survive on chats and algorithms, Instagram does not go into the trenches, Facebook is useless at the gas pump, Twitter does not cultivate wheat fields and the

smartphone cannot be used to heat our homes on winter evenings. It is undoubtedly an era of great discoveries.

This is what, in a discussion with Francesco Gattei (Eni's CFO) a few nights ago, we described in a play on metaphors as the conflict between molecule and electron. The molecule always wins. And now everyone is looking for the molecule. Not just hydrocarbons and key manufacturing materials: in a few weeks, we reached crisis situations for wheat, soybean, sunflower oil, phosphates used for fertilizers. The index of food products developed by the United Nations (the FAO Food Price Index) has hit an all-time high, with the prices of meat, cereals, dairy products, vegetable oils and sugar at all-time highs. If the shopping cart becomes a problem for the wealthy West, imagine what all this means for poor or developing countries. In 2020, the market for cereals from Russia and Ukraine was worth USD 6.9 billion. Supplies have been interrupted and we also need to consider the need for inorganic fertilizers, which used to come from Kyiv and Moscow; without, there will be poorer crops in a continent where over 20 percent of the population is malnourished: 280 million people. Food insecurity across Africa is a reality.

I read a report from the U.S. Department of Agriculture explaining how stable rice prices in this skyrocketing price scenario will change nutrition in some countries. We are at the foundation of existence: Food is culture, a profound fact that leaves marks in the soul; a memory machine far more powerful than any supercomputer. And Africa in this game of chess with death (Ingmar Bergman, The Seventh Seal) is a problem of further instability; the Arab springs of 2011 began with the bread revolt in Tunisia. Everything is visible, connected and disconnected.

We must state clearly: Africa is not a Western deposit of raw materials; it is a place that must be understood, studied and afforded respect. With Claudio Descalzi, I often touch on this issue and every time I catch in his voice a whisper of tree-lined savanna that is more than just hope, because Claudio in Africa has discovered the greatest deposit: love. Not just the love of the family that gives meaning to the life of each of us, but a dimension of existence in which splendor and misery are an opportunity to think about our model of development that seems unable to stop growing inequality (read the illuminating studies by the economist Branko Milanovic) that we export in large quantities more effectively than we have ever been able to do with democracy.

Time is a mill that patiently grinds events and transforms them into historical fact. But in the fraction of the calendar, we wait for calm after the storm, space curves and winners and losers emerge on the field. And this too is a thought of the classical world that has a problem with contemporaneity. We are transported by the full river of confrontation between Great Powers, who all have nuclear weapons, and the final discovery is that of the supercomputer in the film War Games: nobody wins. we

by Moisés Naím

THE DEVELOPMENT OF THE AFRICAN CONTINENT IS A SLOW PROCESS DRIVEN BY THOUSANDS OF ENTREPRENEURS AND THE MILLIONS OF SMALL DECISIONS THEY MAKE DAY BY DAY TO SOLVE SPECIFIC PROBLEMS

> N MY YEARS as a magazine editor, I came to expect with reliable regularity a surge of articles celebrating the dawn of Africa's Renaissance. Time and time again, editorialists and politicians would submit for publication articles announcing and welcoming an alleged African Renaissance—a promised, always just-round-the-corner moment when the continent would throw off the oppressive weight of history and claim its rightful place as a dynamic pole for progress and development. The phrase, it turns out, dates all the way back to the 1940s, when the noted Senegalese intellectual Cheikh Anta Diop proposed that Africa's future could be built on a rebirth of the civilizational vigor of the ancient Egyptians, just as Europe's had

been built by reclaiming the heritage of the ancient Greeks and Romans. It was recirculated at the turn of this century, as South Africa's second democratically elected President Thabo Mbeki sought to sum up his vision for the continent. And it continues to crop up now and again when the call goes out for a sunny, optimistic vision of Africa's future.

This momentous transformation is always heralded, always right around the corner, and always just out of reach. It brings to mind the old, grim joke about how "Brazil has a great future ... and it always will!"

A GRADUAL AND UNEVEN PROGRESS

As it happens, Africa's progress so far this century has been gradual and uneven. It is true that several of the continent's leading democracies have consolidated in recent years, but it is also true that out of the 52 coups and coup-attempts recorded since the year 2010, 43 have been in Africa. Institutional fragility or outright

kleptocracy continues to define the Sahel. For every success story like Malawi's and Zambia's, whose democracies are on the mend, there is a Sudan-whose nascent democratization was brutally put down by men with guns last year-or Mali, where chronic jihadist violence and state dysfunction overwhelmed France's attempts at armed peace-making.

Yet, aside from the dreadful pandemic-hit year of 2020, African economies have continued to grow-not spectacularly, but solidly. And growth is no longer concentrated overwhelmingly in resourcerich nations. Remarkably, since the



Two students read a book in the light of an LED bulb, powered by solar technology by M-KOPA, a Nairobibased photovoltaic lighting system provider. M-KOPA customers pay for their solar panels in small regular installments using a mobile phone money transfer service.



A young African woman listens to music from her smartphone in the city center of Dar es Salaam in Tanzania. The extensive mobile network coverage in the urban areas of the Africa has also marked a breakthrough in terms of economic development.

2008 financial crisis, Africa's non-oil economies have, as a local contexts across dozens of industries, from agriculture and group, grown faster than its oil exporters. Yet growth rates in both groups are lower now than in the decade leading up to 2008, another sign that Africa's convergence with the rest of the world will be slow and drawn out, not sudden and dramatic. The continent continues to draw only a very small share of international investment flows, less than 2 percent of the global total. And while extractive industries no longer dominate the investment picture as they once did, the total is not really growing. The major infrastructure development priorities in recent years have mostly originated in China, and they have set off a furious backlash due to the neo-colonial overtones of many projects due to their worrying environmental and social impacts.

MANY LITTLE SUCCESS STORIES

But while big success stories are hard to discern at the macrolevel, zoom in closer and it's easy to find many encouraging

signs. While the Chinese government's mega-projects in Africa meet with increasing resistance, many individual Chinese firms are setting up factories and installing cell phone towers in cities all through the continent, bringing badly needed jobs, knowhow and technology. And while major utilities struggle to finance the power plants needed to supply Africa's urban consumers, down at the grassroots level smaller firms are leapfrogging them into oblivion.

Take M-KOPA, one of the most innovative providers of African solutions to African problems. Rather than waiting for national utilities to get their act together and bring power to the continent's widely dispersed rural populations, the company sells solar kits you can quickly install yourself to power anything from a couple of lightbulbs and a cell phone charger to a satellite TV setup or a small fridge. Piggybacking on Africa's well-developed mobile payment infrastructure and internet- of-things technology, M-KOPA provides flexible fi-

nancing solutions based on daily micropayments for the equipment. Its simplest setups can cost just a few U.S. cents a day, payable through a mobile payment platform. Miss today's payment and the lights go out tomorrow. Pay again tomorrow, and the lights come on again the day after that. It's not just a nice idea. M-KOPA now has over a million clients across four different countries, and the company is growing fast.

And M-KOPA is just one example-across the continent, entrepreneurs are hard at work devising innovative solutions adapted to their

logistics to fintech and telecommunications.

Maybe, then, the problem is that we've been looking for the African Renaissance in all the wrong places. Maybe the African Renaissance will not come from presidential palaces or international investment conferences. Maybe it won't show up right away in the balance of payments accounts, because it is building slowly, out of sight, in the decisions of thousands of businesspeople making millions of small decisions day after day to solve specific problems. Maybe the African Renaissance is underway, under the radar.

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vertible fact. Everyone from policy makers to ordinary citizens should acknowledge that a prosperous tomorrow without conscious group cooperation is unattainable. There are common

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Wind turbines producing clean electricity in Port Victoria, Seychelles. Given the challenges of access to energy and supply that Africa must face, there seems to be the undeniable need to develop an energy mix that reconciles renewable sources with fossil fuels.



A teacher helps a female student in class in Cape Town, South Africa.



Panoramic view of the Blyderivierspoort Dam and Blyde River Canyon, in South Africa, in the province of Mpumalanga. It is the third largest canyon in the world, with a length of 26 km and a depth of 800 meters. phenomena and consequences, a world united in diversity.

WHAT IS HAPPENING IN AFRICA?

Last November at Glasgow's COP26 39 countries (including seven African countries) and development agencies pledged to stop fossil fuel projects, building upon EU's Green New Deal in a search for a new approach based on the use of cleaner sources of energy. However, this purpose does not seem to take into full account Africa's unique situation and the fact that access to energy remains limited, with almost 600 million Africans remaining off-grid and with remarkable differences and inequalities among African countries. Only four African countries (Egypt, Mauritius, Seychelles and Tunisia) have reached a full level of electrification. Thus, in Africa access to energy must be a priority for the energy transition.

Africa's share of the global carbon emissions (4 percent) is less than half its share of the global population (17 percent), while EU emissions are twice as high as Africa's. Moreover, Europe bears a much larger historical responsibility for climate changes when compared to Africa.

Even though Africa is endowed with impressive renewable potential, resources vary greatly between countries across the Continent and some of them, most notably wind and solar, are not entirely reliable. Therefore, an excessive focus on them may not be sufficient to grant consistent and affordable energy to a significant level of the population.

Some countries, such as Angola and Nigeria, are heavily dependent on oil and gas, while others have a greater potential to implement green technologies within a short time span, such as Seychelles' high offshore wind capacity or Ethiopia's rich hydro and geothermal assets.

Quoting former President of Nigeria Olusegun Obasanjo: "No other Continent in history has been tasked with the challenge of developing without polluting, whilst being simultaneously the major victim and lowest contributor to emissions."

Since Africa faces such an unprecedented task, there seems to be an undeniable necessity to take advantage of an energy mix that reconciles renewable sources with fossil fuels.

Natural gas, which is abundant in Africa (its estimated reserves are 33 times larger than the EU's), is significantly less polluting

and damaging to the environment than other cheaper available solutions. And natural gas is the best transitional tool to provide widespread and affordable energy access across the Continent.

Africa Union's Agenda 2063 recognizes climate change as a major challenge for the development of the Continent. Despite structural and economic disadvantages, African countries have made remarkable efforts in driving the global climate agenda, as demonstrated by the high levels of ratifications of the Paris Agreement 2015 across the Continent (90 percent) and the widespread commitment to transitioning to green energy within a relatively short time frame.

To reduce climate-related risks and the impact of extreme demic st events throughout the Continent, many African countries In the A have focused their attention on reducing poverty by promoting peace, s socio-economic growth, especially in the primary sector, which increasing employs more than a half of Africa's population. Clean energy displace policies and value-addition techniques applied to agriculture security, have proven to be promising tools capable of reducing poverty further two to four times faster than growth in any other sector. Solar-

powered micro-irrigation, jointly with the reduction of carbon emissions, reportedly increases farm-level incomes up to ten times, improves yields by three times and significantly reduces water consumption up to 90 percent.

AN INDIGENOUS ENERGY TRANSITION

In the light of the above-mentioned, respecting the right of the African people to pursue an indigenous energy transition according to their own timing and specific needs seems essential, as this will support them in attaining a sustainable and inclusive growth, one that will leave no one behind.

In these respects, the post-COVID-19 recovery may well be based on a new, green, sustainable and climate resilient development paradigm. The evident interdependence between climate and energy phenomena on both the African and the European continents should lead us to think in terms of shared solutions. This approach avoids the socioeconomic consequences deriving from imbalance that, due to their complexity, can intertwine perniciously and become unmanageable issues. Important political challenges also lie ahead: sustainable peace and security; good governance and the promotion of human rights; the fight against irregular migration and the empowerment of smart mobility; sustainable economic development; economic cooperation as well as increasing levels of coordination in cultural, health and scientific fields.

Stability and security in the Continent are crucial preconditions to any effective coordinated development strategy, and to achieve that working on the pacification of the Continent and the strengthening of democratic systems is a top priority. Likewise, promoting multilateralism as well as inter-communitarian and interreligious dialogue will be crucial to combat violent extremism and prevent further inter/intra-communitarian conflicts.

Africa in the last decades has taken the European Union as a model to pursue its own path of continental integration. Notably, European experience has so far clearly highlighted the benefits of economic cooperation and market unification as powerful drivers to productive coordination.

In this perspective, the African Continental Free Trade Area (AfCFTA) represents a crucial step towards the African Union's ambitious goal to achieve a single market by 2050. The obstacles along the way remain heavy, but the beginning of the process bodes well for the future, notwithstanding the pandemic storm.

In the African continent, the close interconnection between peace, security, stability, development and climate change is increasingly evident and undeniable, and it affects population displacements, stimulates forced migration, aggravates food insecurity, engenders inter/intra-communitarian fights and puts further stress on the management of water and primary resources.



Developing countries are particularly vulnerable to climate change. Communities that do not have the institutional and financial capacity to cope with adverse shocks are forced to adapt. Yet, human resilience should not be taken for granted. The World Bank recently highlighted that by 2050 sub-Saharan Africa could see up to 86 million climate-related domestic displacements, 40 million in South Asia and 19 million in North Africa. In other words, one of the toughest challenges related to climate changes is that of climate refugees, a newly quoted category, neither recognized nor defined by international law.

In addition, if it is true that Africa's economic growth is strictly linked to demographic expansion, it is also true that the levels of unemployment in the Continent so far have not decreased. Africa's population is set to almost double from 2010 to 2026, while the GDP growth per capita is estimated at barely onethird. Notably, the African labor market is not ready to absorb the 30 million mainly young job seekers expected by 2030. Left with weak and insecure living perspectives, youngsters might well be forced to enter informal markets, embracing the dream of insecure migration and sometimes filling the ranks of criminality.

In the light of all that, it is evident that the management of African migratory flows is one of the most important shared themes that involve both Continents' commitment

Approaching this problem as a containment issue will only nourish the creation of new irregular migration routes. In 2019, there was estimated revenue of about EUR 70 million for human smugglers along Western and Central Mediterranean routes

Based on a superficial misperception, the policy of some European countries to impose greater and tougher control over migration flows may turn into a useless mantra. Instead, smarter strategies will consider migration an opportunity—not a threat—and will focus on the legal, positive and balanced aspects of the topic. It is important, for example, to continue investing in information, capacity building, vocational training, all within the framework of a European strategy that aims at helping young Africans in their search for decent jobs and opportunities to develop their potential in their homelands.

THE IMPORTANT ROLE OF ITALY

Thanks to its strategic position at the centre of the Mediterranean, as well as the traditional inclination to dialogue and its deep-rooted presence in the Continent, Italy is a natural and favorite interlocutor to African countries.

Africa has long played a central role in Italian foreign policy action. Moreover, in recent months, we have strengthened our commitment in accordance with the priorities outlined in the strategic policy document "The Partnership with Africa," adopted by Minister Di Maio in December 2020.



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On Oct. 7 and 8, 2021 in Rome, the third edition of the Italy-Africa Ministerial Conference, entitled "Encounters with Africa," was dedicated to the issues of sustainable development, environmental protection, green finance, renewable energy and energy transition.

The Conference registered a huge institutional participation, with 50 African States represented (34 at political level) and 12 regional organizations (including African Union, African Development Bank and UNECA). The event was part of the Italian Presidency of the G20 and the co-partnership with the United Kingdom for the COP26. We conceived "Encounters with Africa" as a virtual bridge that, after the Pre-COP in Milan, was meant to connect Africa and the international community, up to the G20 Summit on Oct. 31 and the COP26 Glasgow Summit in November.

Compared to the previous editions of 2016 and 2018, "Encounters with Africa" had a particularly innovative format, with the involvement of companies, nongovernmental organizations and representatives of the academic world and civil society.

dedicated to the deepening of the themes of renewable energy, energy transition, green finance, sustainable and inclusive development and an additional round table dedicated to blue economy.

We have purposely chosen to focus on these issues because we Planet. are aware of the enormous African potential in terms of human capital, natural resources and clean energy sources, key factors for fostering sustainable development and a better-structured Euro-African partnership.

"Encounters with Africa" represented a fruitful moment of exchange and dialogue between institutions, businesspeople and representatives of civil society, helping to define common lines of action to address the continental challenges linked to en- tural Diplomacy at the University of International Studies of Rome (UNINT).

ergy, climate, environment and sustainable development. The relationship between Italy and Africa is based on an equal partnership, aimed at surpassing the traditional dynamic "donor/beneficiary" to face together the incoming global challenges, such as sustainable and fair development.

The Italian initiatives are inspired to a people-to-people inclusive approach, with its main task being to bring civil society closer to its institutions by filling a social and political gap that today is dangerously occupied by regional and international detractors that find their nourishment in chaos.

FOCUS ON MUTUAL INSPIRATION

The Cameroonian philosopher Achille Mbembe has often highlighted the need for the international community to continue to collaborate with the African continent so that its people can be helped to break the distorted mirror of "mere beneficiary self-image" in which they continue to identify despite the social, economic and cultural improvements registered in the last few decades.

As we said, the activities were divided into four thematic panels This is precisely the meaning of the Italian and European partnership with Africa, today and tomorrow. Mutual inspiration, acknowledging that the Ubuntu saying "I am because you are," far from having mere idealistic implications, contains a vivid core of pragmatism which is vital for the survival of the entire

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AT THE LAST EU-AU SUMMIT, THE TWO CONTINENTS DEFINED THE BASIS OF A NEW PARTNERSHIP ON TRADE, CULTURE AND INFRASTRUCTURE. THE GLOBAL GATEWAY WILL PROVIDE INVESTMENT FOR ACCESS TO ENERGY AND SUSTAINABLE GROWTH

E ARE GOOD AT FINANCING road construction. But it doesn't make sense for Europe to build a perfect road between a Chinese-owned copper mine and a Chinese-owned harbor." These were the words of the President of the European Commission, Ursula von der Leyen, summarizing the whole European Union strategy for Africa. To wrest from China the domination it has been building for decades. To achieve this, the challenge is on the same plane: investment, but done differently. "We will take a values-based approach, offering transparency and good governance to our partners. We want to create links and not dependencies!" assures the EU leader.

To create bonds we need investments. For Africa that investment will be EUR 150 billion over the next seven years, half of the entire allocation of the Global Gateway, the challenge to China's New Silk Road.

THE EU-AU SUMMIT AND THE INVESTMENT PACKAGE

The plan was made official at the Sixth European Union-African Union Summit that was held in Brussels on February 17-18, 2022. The summit required eighteen months of preparation and several trips by European commissioners to the African continent, the final one by Ms. von der Leyen and half of the Commission a week before the summit.

"Global Gateway is a strategy for investment in infrastructure and in people. The most precious investment you can do is the It is a **NEW EUROPEAN**

STRATEGY to boost smart, clean and secure links in the digital, energy and transport sectors and to strengthen health education and research systems across the world. It is considered the European alternative to China's JE GLOBAL GA Belt and Road Initiative.

Up to EUR 300 billion IN INVESTMENTS have been committed until 2027 The strategy will be delivered through a Team Europe approach, which brings together the EU and EU member states with their financial and development institutions, including the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD). It also seeks to mobilize the private sector.

IN AFRICA

DIGITAL 🖌 To improve connectivity, there are plans for the EurAfrica Gateway Cable, an international submarine fiber optic cable that will connect the EU to Africa along the Atlantic coast. A European satellite communications program has been envisaged to facilitate access to affordable broadband in Africa.

ENERGY 🗲 The ambition for 2030 is to increase renewable energy production capacity by at least another

300 Gw





investment in people. We want investments in quality infrastructure—connecting people and goods and services. We want a values-based approach, we offer transparency and good governance. ... Because we want to turn Global Gateway into a trusted brand around the world," said the Commission President in her opening speech before African leaders.

There are three main categories for this investment, infrastructure, transport and digital interconnection. The top priority is energy, and this was so even before the war in Ukraine, which has accelerated the EU's need to free itself from its energy dependence on Russia. She continued, "we all know firsthand that sustained economic development hinges on reliable access to energy. Africa has solar, wind and hydropower in abundance. So let us build on that."

The investments also include electricity interconnections and energy access. Macky Sall, President of Senegal and rotating Chair of the AU, said that there are 600 million people without access to electricity in Africa. There needs to be investment in transport corridors like roads, railways and waterways, because it is the connection of energy, electricity, transport and communication that will open wide the door to the African Free Trade

Area. Ms. von der Leyen said she had met "young entrepreneurs who do not need any smart business idea anymore because they have them in abundance. ... But what they need is access-access to the internet to develop their brilliant ideas. That's all they want, access to the internet. Thus, we want to focus on connecting Europe and Africa via submarine cables, and Africa's regions via terrestrial cables. And also satellite communication, it covers both our continent, to indeed bring high-performance broadband to the remote regions," announced the President of the Commission.

More specifically, the investment package will increase the share of renewable energy and hydrogen in the energy mix and that will improve access to affordable, reliable and sustainable energy and support market integration and sectoral reforms. The ambition for 2030 is to increase renewable energy production capacity by at least 300 gigawatts (GW). Furthermore, across Africa, the massive spread of renewable energies and the production of clean hydrogen will contribute to a target for electrolysis capacity of at least 40 GW by 2030, unlocking trade opportunities in both supply and demand for energy-intensive industries. To improve connectivity, the planned EurAfrica 1.8 million square miles of land and ensuring water security.

Gateway Cable, an international submarine fiber optic cable that will connect the EU to Africa along the Atlantic coast, will promote the digital sovereignty of the two continents, guarantee stringent rules on infrastructure and IT security and increase the development of intercontinental data flows. A backup secondary connection to the EllaLink cable, which connects Brazil to Europe via Africa, will expand the global dimension of network connectivity and offer greater resilience to disruption. Finally, nearly 300 million Africans live more than 50 km from a fiber optic or cable connection, so a European satellite communications program has been envisaged to facilitate access to broadband at affordable prices.

AMBITIONS AND PROSPECTS FOR 2030

The initiatives launched under the investment package will also promote the sustainable use of natural resources and the protection of biodiversity and nature-based solutions as the foundation for a green recovery, including support for the protection of landscapes and ecosystems. The ambition for 2030 is to improve the livelihoods of 65 million people by capturing carbon, stabilizing Investments will also be increased in support of the agri-food industry and the processing of fishery products, facilitating innovation and promoting better nutrition. Another goal for 2030 is to accelerate the sustainable transformation of African food systems, in support of the African agenda on agriculture, fisheries and food development. This transformation will be especially necessary after the war in Ukraine, which risks creating a serious food crisis for the whole continent in the next 12 to 18 months. It will also strengthen resilience by supporting the mitigation of disaster risk and climate change adaptation, and this improved preparation for disaster will ensure a better response. In the short term, however, we need to get past the COVID-19 pandemic for good. So far, Africa has not enjoyed the privileges of the West in its vaccination campaigns. At the summit, the AU reaffirmed its commitment to supply at least 450 million doses within the first half year, but that is not all. Europe will provide EUR 425 million to accelerate the pace of vaccinations

and support efficient dose distribution, training medical teams, analysis and sequencing.

The goal is to enable Africa to produce its own vaccines, made locally, easily accessible and not just for COVID-19. To succeed, the EU, in collaboration with the World Health Organization (WHO), has announced the transfer of mRNA technology to six African countries, South Africa, Nigeria, Senegal, Kenya, Egypt and Tunisia. A European investment of EUR 40 million, of which 20 million will come from France, will respond to a need that can no longer be deferred. The aim



von der Leyen, Michel, Emmanuel Macron and the WHO director general, Adhanom Ghebreyesus. "All that has been asked for is that the TRIPS waiver should be done within a set period of time, so as to enable those countries that do not have easy access to vaccines to have access to vaccines. And we are talking about the lives of hundreds of millions of people, rather than the profitability of the few companies. It is not acceptable that Africa is consistently at the back of the queue in relation to access to vaccines," he added.

igation of disaster risk and climate change adaptation, and this improved preparation for disaster will ensure a better response. In the short term, however, we need to get past the COVID-19 pandemic for good. So far, Africa has not enjoyed the privileges of the West in its vaccination campaigns. At the summit, the AU reaffirmed its commitment to supply at least 450 million doses within the first half year, but that is not all. Europe will provide EUR 425 million to accelerate the pace of vaccinations

> agreements. The proposal was supported by several developing countries in Africa, Asia and South America, but opposed by the EU and the United Kingdom, while the U.S. was open to a waiver of patents on vaccines only. This last partial waiver is the compromise still being studied by the respective negotiating teams.

WE ARE STILL FAR FROM A REAL SYNERGY

The road to a true EU-Africa partnership still seems long. This is demonstrated by the African votes in the UN resolution condemning

the Ukrainian invasion by Russia, one of the most important tests of geopolitical influence since the end of the Cold War. 54 African countries were entitled to vote. The majority, 28, sided with Ukraine; only Eritrea voted against the resolution. But almost a third refrained from taking sides (17 out of 54), following the Chinese line. Eight countries were absent. The abstainers included Algeria, Angola, Congo, Senegal and South Africa. The latter two had played a central role in the EU-Africa summit.

We

BRAHIM MAARAD AGI reporter. Brussels correspondent

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in the north of Morocco: the largest port in Africa. With the Global Gateway, the European Union plans to allocate substantial funding to the transport sector. "Global Gateway is a strategy for

View of the port of Tangier Med,



"Global Gateway is a strategy for investment in infrastructure and in people." Thus stated the President of the European Commission Ursula von der Leyen during the EU-African Union Summit which was held in Brussels on 17-18 February this year.



Fishermen at sunset, in Namibia. With the European Union's Global Gateway initiative, investments will be increased in support of the agri-food industry and the processing of fishery products, facilitating innovation and promoting better nutrition.





by Gabriela lacobuta

TO ENSURE THAT THE SUSTAINABILITY TRANSITION BECOMES AN OPPORTUNITY FOR ENHANCED COOPERATION RATHER THAN A BARRIER, THE EU AND AFRICAN COUNTRIES MUST DISCUSS ALL IMPLICATIONS OF ENVISIONED MEASURES AND PLAN FOR A SUSTAINABLE FUTURE TOGETHER. TO THAT END, THEY NEED TO ENSURE AN EYE-LEVEL PARTNERSHIP ITH THEIR VARIED INTERESTS and needs, are European and African countries likely to build a stronger partnership? The Summit of the European Union and the African Union (EU-AU) at the end of February shows that cooperation between the two continents carries on. Yet, the need for a makeover of the partnership has been increasingly voiced. Notably, recent approaches to the COVID-19 pandemic and the unmet target of USD 100 billion climate finance per year by developed countries have further strained AU's trust. As more and more partners, such as China and Russia, are seeking African countries' attention, the EU needs to show its willingness to listen and to strive for an eye-level approach to main-



tain a favorable position. Nevertheless, African countries too would need to show willingness to equally engage in the partnership, with the mutual contributions and cooperation required by an eye-level relationship.

CONVERGENCE ON SUSTAINABLE DEVELOPMENT

Despite their differences, the AU and the EU appear to converge on the goal to achieve sustainable development. On one side, the EU released its European Green Deal, aiming to achieve carbon neutrality by 2050, and followed through with supporting policies and laws. On the other side, the AU clearly signaled its interest in sustainable development, including clean energy and climate proofing, in the Agenda 2063 and its Green Recovery Action Plan (regarding the COVID-19 pandemic). Yet, the two continents come from very different perspectives. The EU has a historic responsibility to decarbonize its economies, as one of the largest global greenhouse gas emitters (currently contributing approximately 8 percent). In contrast, Africa contributed very little to the global greenhouse gas build-up—currently approximately 4 percent annually—and is highly vulnerable to already visible climate change impacts. Most European countries are supportive of climate change mitigation, yet many African countries are still skeptical of the socio-economic benefits of greening and decarbonization and see these as constrains to development.

Europe and Africa have a long history together and as such, their economies have been strongly intertwined. Not only are the EU and its member states Africa's biggest financial donors and investors, but they also represent the largest trade partner, absorbing 33 percent of African exports and accounting for 31 percent of imported goods in 2020. For this reason, the deep transformations envisioned by the European Green Deal and sustainable development achievement on both continents would have major implications for their partnership. While neither Europe nor Africa have a tested model of sustainability, they can choose to move forward together and cocreate a sustainable future. In this article, I look at some of the key considerations needed to ensure a healthy partnership in the green transition, with a view towards investments and assistance, trade and the role of the energy sector.

BEYOND THE DONOR-RECIPIENT RELATIONSHIP

As the biggest donor of official financial assistance, EU institutions, excluding the European Investment Bank (EIB), committed approximately USD 130 billion in funding to African countries between 2002-2019, of which around USD 10 billion were committed to climate and the environment (see Figure 1). At the EU-AU Summit, the EU pledged to raise an investment package of USD 150 billion—including through the EIB, and likely a third dedicated to climate action—to support AU's Agenda 2063 and sustainable development.



Europe and Africa have a long history together and as such, their economies have been strongly intertwined. The EU and its member states represent Africa's largest trade partner.



FIGURE 2 - EU- AFRICA: IMPORT, EXPORT AND TRADE BALANCE

In 2020, due to COVID-19, EU imports from Africa fell more than exports, sending the trade surplus to EUR 24 billion. On the contrary, in 2021, exports increased by EUR 21 billion against EUR 41 billion for imports, reducing the surplus to EUR 4 billion.

EU EXPORTS OF GOODS TO AFRICA



FIGURE 4 - ENERGY EXPORT

The map indicates net imports of energy as share of total energy use, whereby countries with negative values are net energy exporters. The bubbles indicate fuel exports as a share of total merchandized exports, with the largest bubbles representing values of approximately 95 percent.



FIGURE 5 - ELECTRICITY PRODUCTION FROM FOSSIL FUELS, 2021 (%)

Electricity production in South Africa, Botswana, Algeria and other countries is dominated by fossil fuels, while countries such as Angola and Kenya already have a relatively high share of renewable energy in their electricity production.



Moving ahead, the processes of finance disbursement would need to be revised and strengthened to ensure an eye-level partnership. First, any investment strategies would need to be tailored to each country's needs and designed jointly. In that regard, EU institutions would need to be prepared to acknowledge recipients' priorities and African countries would need to be much more proactive in defining their own strategies and bringing them to the table both in bilateral and multilateral settings. For instance, the EU communicated its proposal "Towards a comprehensive strategy with Africa" well in advance of the AU-EU summit, a move that was criticized as agenda setting by some and lauded as transparent by others. Second, an eye-level partnership implies that both parties benefit. EU and AU would need to consider each other's needs and develop strategies that enable job creation, economic growth and green transitions on both continents. Third, to move beyond a donorrecipient relation, partners should gradually reduce the focus

wood and cocoa); and more recently, approved the introduction of a carbon boarder adjustment mechanism (CBAM) that would set a carbon tariff on specific imported products (for now, cement, iron and steel, aluminum, fertilizer and electricity).

Thus, the European Green Deal could have major implications for trade with African countries given the high share of imports and exports, and here I name a few. First, even though the main drivers of deforestation in Africa are subsistence farming and the use of fuel wood, several African countries could be affected by the EU ban on products linked to deforestation. Indeed, the EU relies on wood imports from multiple African countries (notably, Cameroon, Cote d'Ivoire, Congo, Gabon and Ghana) and supplies most of its cocoa demand from the African continent (Cote d'Ivoire provided 41 percent of cocoa imports in 2020, while other notable trade partners were Ghana, Nigeria and Cameroon). Second, a few products placed under CBAM are imported in large quantities from Africa. For in-

ogy transfer and focus instead on joint investments and knowledge cocreation. To that end, opportunities for joint research and innovation, such as international labs in Africa, training and capacity building, as well as strengthening key implementation institutions should be envisioned. Finally, the local private sector must be strongly supported in African countries. Currently, African countries are predominantly relying on governmental investments while the private sector is limited by regulatory

on direct investments and technol-

vate-sector friendly countries such as Kenya, private investments are mostly made by foreigners rather than locals.

THE IMPACT OF THE GREEN DEAL **ON TRADE WITH AFRICA**

environments. Even in more pri-

The EU aims to fully decarbonize its economy and to enhance the sustainability of its production. Additionally, it seeks to avoid potential carbon leakage due to tougher measures at home and to ensure that its consumption (from food to electronics) meets high sustainability standards. Since the release of the Green Deal in December 2019, the EU introduced a series of support measures and calls for partnerships. Notably, it enshrined the carbon neutrality target into law; developed a Circular Economy Action Plan and initiated the Global Alliance on Circular Economy and Resource Efficiency (GACERE); adopted a law that bans imports of products linked

stance, Morocco and Egypt were the second and third largest importers of fertilizer to the EU in 2020, and Algeria is also one of the top partners. Moreover, South Africa and Mauritania were two of the top EU importers of iron ores and concentrates in 2020 (9 percent and 3 percent respectively), while Mozambique and Egypt were among the top importers of unwrought aluminum (9 percent and 2 percent respectively). Steel imports are less substantial, but South Africa and Egypt are notable here. As the EU continues to expand its CBAM coverage and strengthens sustainable

consumption, African countries will need to green their manufactured goods and keep up with demand for more socially and environmentally sustainable products.

To create opportunities for a strengthened partnership, African countries should consider leapfrogging towards green economies and divesting from existing unsustainable practices, while the EU should provide the needed assurance and support for such a transition. In the future, green products are expected to rapidly grow in demand, both in Europe and globally. To avoid stranded assets and market inaccessibility, African countries should seek to diversify their economies through the development of green industries and to decarbonize existing industries. These industries would create jobs and sustainable economic growth in Africa and could aid EU's sustainable consumption goals achievement at home. Circular economy integration between EU and African partner countries could play to deforestation (covering beef, soy beans, coffee, palm oil, a significant role here. The two continents could closely tie

The European Green Deal could have important implications for EU-African trade. In particular, several African countries could be affected by the EU ban on



A tea picker in Kericho County, Kenya. Currently, primary goods nake up 65 percent of European imports from Africa.

deforestation-linked products.



Solar panels in Quarzazate, Morocco. Africa has a very high potential for renewable energy; this potential would be sufficient not only to expand access to electricity and meet the continent's expected increase in industrial and domestic

demand but also to generate exports

of green energy.







their production chains, while making sure that value is fairly created on both sides. The GACERE could be a great platform for such future initiatives and Morocco, Rwanda and South Africa are already among the 16 country members of the Alliance. Nevertheless, increasing value added in Africa should be a key consideration in circular economy partnerships and beyond. Currently, exports from Europe to Africa are dominated by manufactured goods (68 percent in 2021), while imports from Africa predominantly consist of primary goods (65 percent in 2021) (see Figure 3). Boosting the share of manufactured goods exported from Africa should be a priority. Moreover, as Africa's mineral resources will be in high demand in on the continent, especially those that are energy intensive,

an increasingly digitalized world, fair value creation and decent and safe working condition must be ensured.

THE ROLE OF THE ENERGY SECTOR

A particularly important role in the EU-Africa cooperation for sustainable development will be played by the energy sector. Around 45 percent of imports from Africa to the EU are currently represented by fossil fuels. While primary energy fuel imports are currently not regulated through CBAM, this could be a future step. Moreover, the carbon footprint of the African energy systems determines the footprint of products manufactured © GETTY IMAG

and would affect the tariff. Most importantly, EU's energy sector transformation will mean a strong decrease in imports of fossil fuels altogether and a high demand for clean energy to complement domestic production.

The African continent has a very high renewable energy potential. This potential would be sufficient not only to expand its electricity access—which should be a priority, to cover the remaining 600 million people without electricity—and feed the expected increase in industrial and household energy demand, but also to generate green energy exports. Strong support for renewable energy in Africa would help to green local industries. For instance, the potential of low carbon-footprint steel pro-

duction through green hydrogen use in South Africa has been considered. Similarly, initiatives have been launched in Morocco to produce green ammonia and lower the carbon footprint of fertilizers (additionally reducing Morocco's ammonia imports). Morocco is also envisioned as a key partner for direct green-electricity and green-hydrogen imports to the EU and other African countries could follow suit.

Yet, is Africa ready to leapfrog into clean energy systems and to join the green hydrogen supply race? The lack of fully developed electricity systems and the need for substantial investments could be seen as an opportunity to build smart renewable-ready systems from the start. Strong political will is needed and many African countries hope to bank on their fossil fuel resources, encouraged by the slow global climate action. Answering the above question is not straight forward as each African country is intrinsically different (see Figure 5). Countries like Angola and Kenya already have a relatively high share of renewables in electricity production. In contract, electricity production in South Africa, Botswana, Algeria and others is dominated by fossil fuels. While countries such as Morocco import most of their energy, others are net exporters of fossil fuels, e.g., South Africa, or have recently discovered reserves they seek to exploit, e.g., Kenya and Mozambique. On top of this, access to electricity varies widely across the continent, from almost 100 percent in the North-African countries to less than 5 percent in South Sudan and the Central African Republic. Hence, African countries have different needs and interests in a low-carbon transition and partnerships should consider their specific context in view of a just energy transition.

To ensure that the sustainability transition becomes an opportunity for enhanced cooperation rather than a barrier, the EU and African countries must discuss all implications of envisioned measures and plan for a sustainable future together. To that end, they need to ensure an eye-level partnership, with joint learning and knowledge creation, joint circular economy systems, and enhanced jobs and economic benefits on both sides. They must break out of old partnership patters to address each other's challenges and support each other's potential, while acknowledging intrinsic heterogeneity and varied needs as well as the implications of their long history together.

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N JANUARY 2012, African leaders gathered in Addis Ababa, the capital of Ethiopia, to inaugurate the new, futuristic building of the African Union, a USD 200 million, eco-sustainable project, developed over a total area of 112,000 square meters, with a main building of twenty floors, 32 conference rooms and a conference center seating 2,500. All paid for by the China State a security officer at the African Union building noticed that Construction Engineering Corporation, the giant construction company owned by the Chinese government. The then-president of the African Union, the leader of Equatorial Guinea, Teodoro Obiang Nguema, said during the inauguration ceremony that the building was "the symbol of the new Africa." In French newspaper Le Monde, it was discovered that the comfact, it was above all the symbol of the new relationship between puters and electronic equipment that China had donated to the

Africa and China. The whole complex was a gift by China to the most important political organization on the African continent: it had been constructed by Chinese workers; the materials used to build it and even the furnishings were brought from China. All for free? Not exactly. Five years after its inauguration, every night between midnight and two o'clock there was a strange leak of a large amount of data from the building's internal network. And those data ended up in Shanghai. After a lengthy internal investigation and an investigation by the

FOR TWELVE CONSECUTIVE YEARS. CHINA HAS BEEN THE LARGEST TRADING PARTNER AND BIGGEST INVESTOR IN AFRICA. ALONG WITH THE MASSIVE FLOW OF FUNDING. CHINA BRINGS ITS POWERFUL POLITICAL INFLUENCE TO THE CONTINENT

African Union all had a backdoor from which data was transferred to China. China denied it, but the spying in the center of power in Africa—where policies are decided, and member countries' most urgent needs are also discussed—had been going on since the 2012 inauguration. And it is easy to understand why: information is essential in the great Chinese plan to increase its influence abroad, especially in the places left uncovered by Western development cooperation.

DEBTS AND RIGHTS

The Chinese presence in Africa is often the subject of criticism

Chinese loans in Africa between 2000 and 2019 reached USD 153 billion. Many of the countries that benefit from the loans prove unable to repay them, with the consequent risk that ownership of the infrastructure or designated project will be transferred to China. At the same time, the new definition of human rights promoted by China makes her uncritical of African autocracies and does not require improvements from the point of view of freedoms or system of government. "There are no universal human rights," said the Chinese Foreign Minister Wang Yi during the 49th session of the Human Rights Council in Geneva, instead "the cause of human rights can be pursued only in the light of the reality of each country and the needs of its population."

China has remained the main trading partner and major investor in Africa for twelve consecutive years. The United States is close behind; in third place is France, and then Turkey. According to the 2021 data released by the Chinese General Administration of Customs, the total bilateral trade between China and Africa reached USD 254.3 billion, up 35.3 percent on an annual basis. In the second year of the coronavirus pandemic, Africa exported USD 105.9 billion worth of goods to China, with an annual export growth of 43.7 percent. Despite the communication and supply chain problems due to COVID-19, Chinese exports to Africa grew by 29.9 percent compared to the previous year, due to the increase in demand for essential goods during the pandemic, goods such as pharmaceutical products, medical safety devices, face masks, anti-contamination suits and chemicals. More than half of the entire commercial value of relations between China and Africa is represented by five African countries: South Africa, Nigeria, Angola, Egypt and Congo.

A PARADIGM SHIFT

For the world's second largest economy, relations with Africa account for only 4 percent of its global trade, a small number compared to trade interests with Asian and even South American partners. However, what matters in relations between China and Africa is much more strategic. African exports to China are mainly minerals and metals, which China needs, but also are focused on political influence. That is a radical change in the investment model in developing countries, which Japan, for example, has been observing for some time. "China has made inroads economically and in other fields in Africa and in Central and South America," said Japanese Foreign Minister Toshimitsu Motegi after a trip to Senegal and Kenya in January last year, immediately after that of his Chinese counterpart Wang Yi to Eritrea, Kenya and the Comoros Islands. The paradigm shift is also diplomatic: the Chinese calendar year always opens with a mission by the Foreign Minister to certain African countries. Since 2014, Wang Yi has visited 35 African countries. And it was the energy sector above all that led to China discovering Africa. over what is called the "debt trap." The projects financed by The first project for a Chinese hydroelectric power plant on the

Guinea is also the symbol of a collaboration that has now become traditional. The plant, built by China two years after the independence of Guinea, even ended up on Guinean franc banknotes. After that episode in the 1960s, Chinese investments in Africa stopped for thirty years, until the policy related to participation in the international economy advocated by the then major global players are dependent on Chinese export. For President Jiang Zemin in the early 1990s. China had to grow, and it needed oil, which it began to import mainly from Angola and Sudan. In 2007, about a third of China's crude oil imports came from Africa. Then, over the past decade, China, now a tries such as South Africa, Kenya, Namibia, Mozambique, geostrategic power, has begun to diversify its imports, strengthening ties with countries like Libya, Saudi Arabia and Iran.

continent dates back to the 1960s. The Kinkon power plant in public of the Congo, where 60 percent of global cobalt reserves currently lie. And then there are rare earth elements (REE), a group of 17 chemical elements that are fundamental in the production of technology and microchips. China currently dominates the market as it produces about 60 percent of REE and processes and refines about 80 percent of the world's needs. The vears China has also been searching for mineral deposits on the African continent, which has so far poorly exploited its deposits. These are mainly found to the south and east, in coun-Tanzania and Zambia.

In the rest of Africa, China has other goals. Direct investments China will invest USD 400 billion in Iran in exchange for oil are concentrated in traditional infrastructures such as roads, ports supplies. According to the International Energy Agency, Chinese and railways but also in integrating the telecommunications netimports from the Middle East will double by 2035, despite polit- work using giants such as Huawei and ZTE. Politically, African ical instability in the region. China wants to have different governments have recently begun to control and negotiate

sources of oil supply to avoid further failures such as occurred with South Sudan. Before 2011, China had invested billions of dollars in the oil fields of the then united Sudan, and from there it imported about 5 percent of oil. Then, after South Sudan's independence, China National Petroleum Corporation and Sinopec took 41 percent and 6 percent of the country's state-owned oil company, respectively. But internal instability, U.S. sanctions and difficult plant management have made South Sudan an unreliable producer for China, which has decided to divest. Only Angola remains a firm

ally from an energy point of view, the only African country that still accounts for 10 percent of crude oil imports into China. But despite the diversification policy on oil imports, strategic relations with Africa continue to be very important for China. And the reason is the oil of the contemporary world—those raw materials needed by the technology industry.

COBALT AND RARE-EARTH ELEMENTS: THE NEW BLACK GOLD

The model is that adopted with gold. In the early 2000s, China imported the precious metal from Eritrea and within five years it progressed to the acquisition of the only two operating gold mines in the country, Bisha and Koka. The Asmara project for a copper-zinc-gold-silver mine is also owned by a Chinese company, the Sichuan Road and Bridge Mining Investment Development Corporation. China holds particularly significant investments in cobalt mining throughout the Democratic Re-



naval base in the small East African country, Djibouti, a few kilometers from the U.S. Navy base at Camp Lemonnier. Another will soon open in Equatorial Guinea. At that point, it will be difficult for China to say that it has exported to Africa a model that is much different from the Western one.

GIULIA POMPILI

She has been a journalist for *II Foglio* since 2010, where she covers mainly news from East Asia. In 2017, she started Katane, the first newsletter in Italian on Asian events.

She is the author of the book Sotto lo stesso cielo (Mondadori edition).



A Senegalese woman waves Chinese flags on the occasion of the former President Hu Jintao's visit to Dakar. during a tour of Africa aimed at strengthening economic and political ties between Beijing and the African countries.



Egyptian and Chinese construction workers work on the construction of the business and finance district of the megaproject "New Administrative Capital" of Egypt, about 45 kilometers east of Cairo. The New Capital will house the main government offices and ministries, the seat of Parliament and foreign embassies, covering a total area of 270 square miles.

CHINESE FDI STOCK IN AND FLOWS TO AFRICA



2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

in Africa

China has been the main trading partner and major investor in Africa for twelve consecutive years. Bilateral trade between China and Africa reached USD 254.3 billion in 2021, up 35.3 percent on an annual basis. While Chinese direct foreign investment flows towards Africa exceeded 4 billion dollars in 2020.

TOP10 RECIPIENTS OF CHINESE FDI STOCK (2020)



Source: Statistical Bulletin of China's Outward Foreign Direct Inv



TOP 5 INDUSTRIES FOR CHINESE FDI STOCK IN AFRICA, 2015-2020

(in billion USD)





AFRICA'S TRANSITION TO GREEN ENERGY MUST BE ACHIEVED THROUGH THE RESTRUCTURING OF AFRICAN ECONOMIES. LEAPFROGGING IS ONLY POSSIBLE WITH INVESTMENTS, CURRENTLY BELOW THE NECESSARY LEVEL, MADE ON A LARGE SCALE

HE IMPACT OF THE WAR in Ukraine on global energy security reinforces the centrality of addressing the issue of the energy transition as the crux of achieving sustainable development. The goals of decarbonizing the planet and achieving prosperity cannot be divorced from one another, and Africa has the most to gain from investment in this synergy. The opportunity for a green energy revolution in Africa is so evident that many people almost approach it as a fait accompli, but implementing this energy transition requires an understanding of the structural challenges faced by African countries if opportunities are to be optimized.

THE MAIN PROBLEM IS ACCESSIBILITY

Any conversation around the energy transition must be framed around access to energy. Almost 600 million Africans lack reliable access to electricity while over 800 million lack clean cooking options, and this lack of access poses a problem for the future trajectory of emissions. While the global average in terms of emissions is 4.4 tons per capita, in Africa the emissions are only one ton per capita. Compare this with the United States, where emissions per capita stand at 13 tons!

The challenge of access is due to a multitude of factors but the most pressing is the relative lack of investment in infrastructure to cater to the needs of a growing population. This gap is prevalent both in terms of generation capacity and networks for



transmission and distribution. The ability of Governments in Africa to find this needed investment is severely compromised in the aftermath of the COVID-19 pandemic. Government revenues have not recovered, and average fiscal deficits in Africa are expected to be -6.6 percent of GDP in 2022, with the Ukraine crisis expected to have a prolonged effect.

Significant efforts are also required to address the regulatory and policy space to facilitate private sector investment, and this is one of the pillars of the UNECA's Sustainable Development Goal 7 (SDG7) initiative aimed at increasing investment in critical energy projects across the continent. The path to a sustainable and just energy transition in Africa is predicated on mobilizing the investment required to achieve universal access to energy. Overall foreign direct investment in Africa fell to historic lows during the pandemic, and between 2000 and 2020, Africa attracted only 2 percent of global investment in renewables according to the International Renewable Energy Agency (IRENA).

In total African countries count only 147 GW of electricity generation with 24 countries having less than 50 percent of their population with access.

Grid-based electricity supply generally remains the cheapest means of connecting people to electricity, and while there is significant progress in renewable base generation in Africa, the scale of the power needed necessitates a significant increase in fossil fuel-based generation alongside increased renewables.

While renewables should always be looked at as the long-term solution, to minimize the impact on emissions of any new investment in fossil fuels required for base generation, many African countries are looking to gas as the means to fuel this transition. If generation in Africa were to double by 2040 using natural gas, it would allow the generation capacity from renewables such as wind and solar to multiply by a factor of 38, while increasing global emissions by only 1 percent. Ultimately, the biggest driver of Africa's energy transition will be our ability to better integrate the value chain of energy production into African economies.

INVESTMENTS IN GREEN SECTORS ARE IMPORTANT

The relationship of African countries to fuel imports and exports has contributed to inefficiency and price volatility. Even for petroleum exporters, the high economic costs and inflation associated with energy price spirals detract from the positives in terms of revenues—recently Nigeria and Angola have seen the cost of fuel subsidies rise to 2 percent of GDP.

In contrast, studies done by the United Nations Economic Commission for Africa (ECA) have shown that investing in green sectors, particularly in renewable energy, can contribute to 420 percent higher returns in gross value addition and 250 percent higher returns in job creation compared to fossil fuel intensive traditional sectors. As shown in case studies, invest-



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ing in national value chains for energy production brings a high return on investment. In Kenya for example, investing in biogas energy plants potentially brings a return of 281 percent while in Egypt such plants bring a return of 400 percent increase in gross value. Investing in electric vehicle infrastructure generated returns of 410 percent in Egypt and 293 percent in South Africa and investing in renewable grid-based solar infrastructure in the Democratic Republic of the Congo (DRC) brought returns of 183 percent.

These opportunities can also be found in Africa's position at the center of the extraction of minerals for use in battery technology. Almost 70 percent of the world's potential supply of to develop these pilot projects. The fact that the European cobalt, a critical element in the battery value chain, is found in the DRC. Based on studies done by UNECA with Bloomberg, DRC's projected USD 11 billion worth of raw minerals exports in 2025 could be worth USD 271 billion if DRC captures just 20 percent of global battery precursor production. The same study showed that DRC and other African countries could produce these battery precursors at a 30 percent lower price than the U.S. or China.

Coupled with moves to further connect African power pools, 58 million tons to 131.5 million tons. and harmonization opportunities through the African Continental Free Trade Area (AfCFTA), investing in the African green energy value chain has the potential to accelerate the transformation of African economies, while also delivering job providing support for the secretariat, aims to facilitate the shar-

creation and value addition to change the very nature of production and consumption.

In the mix, we must also consider the opportunities associated with emerging technologies such as green hydrogen. With the potential scale of renewable resources in Africa, the opportunity for African countries to become future exporters of green hydrogen has been touted regularly, while the crisis in Ukraine has further amplified the call for this to be considered. In particular, a number of North African countries plan to tap into this opportunity with large scale pilot projects, and a number of private sector operators have approached African countries Union has allocated 470 billion Euros for this sector as part of its European Green Deal is a significant driver of this interest. For African countries, it is essential that investment in this sector is not only aimed for export but is also integrated within the national energy infrastructure and linked to other infrastructural needs such as transport. Demand for maritime transport is expected to increase the most with full implementation of the AfCFTA, with maritime freight expected to double from

THE ROLE OF THE DIGITIZATION OF ENERGY SYSTEMS

The African Green Hydrogen Alliance, for which UNECA is

ing of experiences among African countries to mainstream best practices and concentrate efforts for research, development and investment in this critical sector. These efforts also include support for the regulatory aspects as well as certification and standardization.

The continued pursuit of the African Union Digital Transformation Strategy is also an integral component of accelerating the energy transition on the continent. Digitalization of energy systems in Africa is in its infancy, but several African countries are part of the digital demand driven energy networks (IEA and UNEP) pilot projects, including South Africa, Tunisia and Morocco. Digitalization of energy systems can help provide appropriate data for more informed decision-making and create opportunities for more automation and improving efficiency. The use of digital technologies such as AI, blockchain, digital

UNECA's SDG7 initiative has been instrumental in raising finance in the very difficult market situation associated with the pandemic. In October 2021, South Africa issued a 3 billion Rand bond, with support from the Development Bank of Southern Africa and technical support from ECA to finance the restructuring of investment into renewables.

Efforts are ongoing to facilitate this type of market access for African countries. But Africa lags severely behind in terms of global green bond issuances. To help correct this the ECA has also launched a Liquidity and Sustainability Facility, developing a repurchasing or "repo" market for Africa, which could lead to USD 11 billion in savings over five years in terms of interest payments on African bond issuances.

Ultimately, Africa's green energy transition must be situated within the restructuring of African economies, and the move

platforms and smart grids within the African energy sector is accelerating. By 2026, USD 300 billion could be added to the continent's economy if countries decide to adopt digitalization in the energy sector. Digitalization can advance the potential for diversification in energy supply such as household solar PV panels and storage and could help to bridge the gap in energy poverty and leapfrog the deficits created by the low level of availability of traditional energy grids across the continent. This will be particularly critical as African countries increase their centralized grid production



Finally, the aspect that will have the most bearing on a successful energy transition will be the availability of affordable financing. As already indicated, renewables usually offer the least cost options for African countries—but the upfront costs are significant, particularly in the context of continued narrowing of fiscal space and rising of debt levels.

Mobilization of the promised funding under the Paris Agreement is essential. For vulnerable countries with limited access to market mechanisms, the investment available in terms of transfers from developed countries can be a catalyzing force for further investment. Unlocking private sector investment will also be critical for Africa's ability to achieve the energy transition it needs. Africa needs huge investments totaling USD 500 billion by 2030 and USD 2 trillion by 2050 to close development gaps according to AfDB.



towards developing more sustainable value chains must be situated within Africa itself to ensure that these countries reap the full benefits. Leapfrogging is only possible with large scale upfront investment, and investment currently remains below the level required to deliver the acceleration needed. A continuation of the status quo risks delaying achievement of the sustainable development goals, locking in unsustainable energy generation in numerous African countries as well as stranding significant assets. It is not a surprise to affirm that the status quo is untenable. The changes

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these changes can deliver two of the most precious global commodities—prosperity and stability.

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Shopping mall in Nasr City, Cairo, Egypt. If African countries decide to digitize the energy sector, USD 300 billion could be added to the continent's economy by 2026.



Workers sweep away loose chippings along the newly built Nairobi expressway between the capital and Mombasa. One of Africa's most pressing problems is the lack of investment in infrastructure that meets the needs of the growing population.



his electric scooter in South Africa. Investments in green sectors can lead to a return of more than 420 percent

Businessman going to work on

in terms of gross value added. For example, investing in electric vehicle infrastructure can generate returns of 410 percent in Egypt and 293 percent in South Africa.

RESOURC v Rabia Ferroukhi, Laura El-Katiri and Mirjam Reine

AFRICA HAS VAST IF UNTAPPED RENEWABLE ENERGY SOURCES. BY HARNESSING THESE RESOURCES, THE CONTINENT COULD LEAPFROG TECHNOLOGY STAGES TO CREATE AN ENERGY SYSTEM BASED ON RENEWABLES THAT COVERS ALL SECTORS AND END USES

S GOVERNMENTS AND OTHER ACTORS in Africa contemplate the energy transition, the continent finds itself at a crossroads. The continent faces a myriad of development challenges, from poverty to climate change, and in the context of energy, improving access to sustainable and affordable energy for the millions of Africans who still lack, all while making a resilient recovery from the COVID-19 pandemic. And all of today's policy choices must be made against the backdrop of a population expected to almost double from today's 1.4 billion people to 2.5 billion by 2050, putting immense additional pressure on the continent's resources.

African countries are among the most vulnerable to the nega-





A Masai observes a wind farm. If Africa were able to double generation by 2040 using natural gas, it could multiply by 38 times its capacity of generation from renewable energies such as wind and solar.



Baobab Avenue, Madagascar. Although the African contribution to greenhouse gas emissions is marginal, the consequences of climate change weigh heavily on the continent: in 2020 alone, USD 38 billion were lost as a result of desertification and mass displacements.

tive consequences of climate change, even though most contribute only marginally to greenhouse gas emissions. Climate change already imposes considerable economic costs on the continent, and African nations suffered economic losses of USD 38 billion in 2020 alone from effects such as desertification and mass displacements. Mitigating climate change and adapting to it will cost billions each year, and the risk is that extreme climate vulnerability, along with prospects for continued environmental pollution and degradation, may compromise the social and economic achievements that Africa's economies and people have made to date, while clouding the prospects for sustainable development.

The path ahead also needs to be informed by rapid changes in the global energy sector. A growing number of countries are committing to net zero climate targets and diversifying energy supply and limiting dependence on fossil fuel has become a political priority for many of the largest energy importers. At the same time technological advances have made renewable energy solutions the least costly option in most countries. It is a de-

eties in Africa in increasingly obsolete energy systems that will burden them with stranded assets, limit economic prospects and damage the welfare of people as well as the environment. Renewable energy use in Africa has historically been centered on the traditional use of biomass for cooking, which remains a mainstay of energy supply for many millions of households, and on hydropower for electricity. In recent years, modern renewable energy deployment has grown, with the biggest additions coming from solar energy. Still, modern renewable energysolar, wind and geothermal energy—contribute only marginally to Africa's energy mix, except for hydropower. Africa accounts for less than 3 percent of the world's installed renewables-based electricity generation capacity, reflecting how little has been done to make use of the continent's vast renewable energy resources, compared with the scramble for its depletable fossil fuel resources.

Modelling highlights the value of a successful energy transition for African countries. The International Renewable Energy Agency's (IRENA)1.5 degrees Celsius Scenario, which lays out velopmental imperative to avoid trapping economies and soci- a global pathway guided by the United Nations' 2030 Agenda

for Sustainable Development and the Paris Agreement on Climate Change, suggests major benefits to Africa with an ambitious pathway based on current commitments. The benefits include a 6.4 percent increase in GDP and a 3.5 percent increase in economy-wide jobs. The energy transition also promises significant welfare benefits, such as employment creation, improvements to public health and environmental benefits, as measured by IRENA's Energy Transition Welfare Index. Translating these model results into reality will require a host of ambitious and comprehensive policies, sketched below.

THE POWER OF COMPREHENSIVE POLICY

Boosting the role of renewable energy and energy efficiency to help Africa shift away from fossil fuel dependence really means pushing the continent into a more sustainable future. To fulfil this potential of the Energy Transition in Africa, renewable energy and energy efficiency targets will need to be accompanied by a comprehensive basket of policies that touch on more than the energy sector. IRENA's 1.5 degrees Celsius Scenario is based on key elements such as international cooperation awareness of renewable energy solutions and their benefits—

(global financial support for the Energy Transition roadmap in Africa), progressive fiscal regimes and carbon pricing, proactive public and private sector investment and targeted environmental and climate policies. IRENA's climate policy basket has a strong impact on the resulting socioeconomic footprint, highlighting the relevance of appropriate policy making for a successful transition.

Some key policies are plans and targets for renewables and greater energy efficiency set at either the national or regional level. These policies must be accompanied by measures to avoid being locked into continued fossil fuel dependence, including a phaseout of fossil fuel subsidies and a move away from further investments in coal or oil and gas. To replace fossil fuel-based energy systems, policy makers must mobilize public and private investments in new or upgraded energy infrastructure, such as power grids, district heating and cooling networks and electric charging stations. Policy makers must also foster innovation and assess what measures are needed to make energy affordable for people. Efforts to raise public

including financial—will be central to ensuring popular acceptance and support for the energy transition.

Direct deployment policies include regulatory measures that create a market for renewable energy, along with changes in the power sector, including grid access and priority dispatch, among other issues. Policies must also include fiscal measures, such as tax incentives and capital depreciation/capital allowances and financial incentives, like targeted subsidies and grants. Power sector restructuring and structured procurement mechanisms, including feed-in tariffs and auctions, have enabled private investment in renewable-based power generation, especially through independent power producers. Such mechanisms are increasingly being introduced as part of a basket of instruments offered by multilateral development banks and development financing institutions, together with financing mechanisms (e.g., concessional loans and de-risking instruments), which are key to unlocking investments.

transition as old fossil fuel industries and jobs fall by the wayside and new ones appear in renewables and related industries.

SCALING UP FINANCE

Large-scale investment will be required to support an energy transition in line with the 17 Sustainable Development Goals (SDGs) adopted by the UN in 2015. Financing will be needed to build renewable energy capacity, create economic structures capable of sustaining the transition, secure associated development benefits and meet the climate challenge. The financial resources that were mobilized to address the social and economic repercussions of the COVID-19 pandemic have altered perceptions of what governments can and must do. The costs of inaction dwarf those required for successful action.

However, access to climate financing remains a key obstacle for African countries, and current investments in power generation in the region remain among the lowest in the world.

A young South African tests the voltage of solar photovoltaic panels. The energy transition will create many new jobs, more than will be lost in the traditional energy sector, and thus



A freight train crosses the desert near Nouadhbou, Mauritania. Energy policy will also have to take into account the transport system: measures are still scarce and focus mainly on biofuels blending mandates.

open up employment opportunities for

women, young people and members

of marginalized communities.



KenGen geothermal power plant in Olkaria, Kenya. Renewables (solar, wind and geothermal) contribute only marginally to the African energy mix, with the exception of hydropower. Africa accounts for less than 3 percent of the world's installed renewable electricity generation capacity.

Africa—as in most regions in the world—have focused on the power sector and, within it, on large, centralized facilities and associated grids. Mini-grids and other decentralized renewables offer additional options, particularly in African countries with large deficits in energy access. However, energy policy must also embrace other end uses including transport, heating and cooling and clean cooking. Solar water heating programs are in place in some countries and include regulations and incentives, and this offers significant opportu-

To date, deployment policies in

nities to collaborate with the private sector. But transport-re- yet to emerge. Continued support from development finance lated measures are still scarce and focus most on biofuel blending mandates.

In the future the focus must shift to electric mobility. Over time, green hydrogen can provide a link between growing and sustainable renewable electricity generation and sectors that are hard to electrify. To realize the socioeconomic benefits of the energy transition, farsighted policies will be necessary to broaden and strengthen Africa's currently limited industrial base as part of a broader effort to diversify economies and reduce dependence on the export of unprocessed commodities. Labor markets are another important area. The energy transition will create many new jobs, surpassing the number lost in the conventional energy sector. This may open opportunities for women, youth and members of marginalized communities to gain employment. But labor market policies will have to address the misalignments that may emerge during the energy



Of the USD 2.8 trillion invested globally between 2000 and 2020, only 2 percent went to Africa, despite the continent's enormous potential. One way to boost spending in Africa is to ensure that public sector investment decisions clearly prioritize renewables over fossil fuel projects. Green financing programs managed by national development banks could improve access to credit for industrial activities that feed into renewable energy value chains. Several examples of such programs exist in Europe, North America and South America, but significant African versions have

institutions, including export credit agencies, multilateral development banks and guarantee funds, will be needed to mobilize additional amounts of capital.

Targeted bilateral and multilateral initiatives can make a difference, too. For example, the International Just Energy Transition Partnership between South Africa and France, Germany, the United Kingdom, the United States and the European Union, announced at COP26, provides a mechanism for supporting energy transitions in South Africa. As part of the Partnership, USD 8.5 billion will be mobilized in the first phase of financing to support "low emissions and climate resilient development, to accelerate the just transition and the decarbonization of the electricity system, and to develop new economic opportunities such as green hydrogen and electric vehicles." Money must flow not just to power sector projects, but also to transport, heating and cooling.



THE PROMISE OF AN AFRICAN GREEN DEAL

The multifaceted nature of the policies required to promote a just and development-oriented energy transition in Africa calls for a comprehensive, coordinated and regionally nuanced approach. A Green Deal tailored to the African context could provide the institutional and programmatic framework needed to mobilize resources and policy action at the appropriate scale. It would combine the objectives of achieving climate and environmental goals and fostering economic development, economic diversification and job creation in the world's most commodity-dependent region in the world, while guaranteeing social equity and welfare for society.

The concept is inspired by the massive mobilization of resources led by President Franklin D. Roosevelt in the United States in the 1930s. Over 70 years later, in the aftermath of the Great Recession of 2007-2008, proposals for another new Green Deal emerged, amid growing acknowledgment of the close connections between socioeconomic and environmental concerns. In the context of the COVID-19 pandemic and the increasingly urgent climate crisis, the concept has been revived and updated in a transformational blueprint for Europe's decarbonization and in legislative proposals in the United States.

An African Green Deal could support the creation of a mechanism for African leaders to articulate, map and assert their own climate transition and development agendas, both at the national and the regional level. Regional coordination is needed to foster synergies among various countries and regions, expand economies of scale, and promote the development of resilient regional supply chains. The creation of regional clusters and supply chains in the renewable energy sector offers the potential of leveraging local capabilities and setting local firms on a path to competitiveness through economies of scale and cost reductions.

Similarly, promoting industrial complementarity can prevent duplication of efforts in the same activities and avoid the fallacy of assuming that something that is true in one country is also true in countries operating in the same regional markets. It can also make local content policies more efficient and effective. Intraregional specialization in different segments of the renewable energy value chain and other energy transition-related sectors can exploit complementarity of assets across the region. African regions have complementary strengths, from critical minerals abundance, to manufacturing capacity, as well as proximity to important trade routes. Such Power initiative for the 11 countries of the Sahel. Most rean approach would support the acquisition of new comparative advantages and provide opportunities for economic diversification across Africa.

This blueprint and master plan for transforming the continent into a global powerhouse establishes the links between energy and industrialization. In addition to the African Development Bank's New Deal on Energy for Africa, which sets out to level. The development of sustainable energy has also been in-



achieve universal access to energy in Africa by 2025, several other initiatives now promote renewable energy deployment: the Africa Renewable Energy Initiative; the Africa Power Vision; the African Clean Energy Corridor and the Desert to cently, the African Union launched a new African Single Electricity Market.

The commitment of members of African regional communities to renewable energy and energy efficiency has already been demonstrated through the formation of dedicated centers that have developed energy plans and roadmaps at the regional

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corporated into several regional development strategies and programs, including numerous African countries' Nationally Determined Contributions (NDCs) that have been submitted as part of the fulfilment of the Paris Agreement.

Cooperation mechanisms related to sustainable energy and industrial development therefore exist both at the continental and regional levels, and a Green Deal program could integrate them into an ambitious policy package. The first contribution of the nascent Green Deal might be to provide a forum within which key regional actors—the African Union, governments, multilateral institutions, the private sector and other development partners—could build consensus, identify credible re-

gional targets, identify and exploit synergies among different national and regional energy transition strategies and plan next steps.

Under the umbrella of an African Green Deal, regional alliances can be created to coordinate the research, production and deployment of specific renewable energy technologies. The COVID-19 pandemic has underlined in dramatic fashion that no country is an island unto itself, and that global solidarity is key. Resolving the climate crisis and ensuring inclusive development will require even stronger international cooperation. Beyond intra-African cooperation, Africa can benefit from a vigorous multilateral approach. For example, the Africa-EU Partnership is an effort to strengthen economic cooperation around shared issues of interest such as climate and the SDGs. Such specific forms of cooperation can draw on the experiences of countries around the world, provide promised climate mitigation and adaptation funding and ensure that lessons and solutions are shared across regions, countries and communities. A holistic vision along with strong political commitment is necessary for success. A comprehensive approach requires strategic vision, a broad policy framework, financial resources on a large scale, and institutional capacities to carry out the strategy. As important as the implementation of any specific measure are an inspiring articulation of policies, broad public awareness and the inclusion of diverse communities and stakeholders.

The private sector, too, has a critical role to play and a responsibility to work constructively with policymakers and other stakeholders to support Africa's path towards a sustainable energy future. This particularly holds true for fossil fuel companies that have derived immense benefits from climate-altering emissions. Africa's future will be determined by the extent to which businesses find ways to support sustainable practices of natural resource use and choose long- versus short-term profitability that equips countries with long-term economic prospects.

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#EAPERGERGENG REVOLUTION

by Lorenzo Colantoni and Giulia Sofia Sarno



THE CONTINENT CAN TARGET ACCESS TO SUSTAINABLE ENERGY BY SKIPPING THE INTERMEDIATE STEPS OF COAL AND FOSSIL FUELS WITH A FULLY ACCESSIBLE AND GREEN ENERGY MIX

FRICA IS AT THE CENTER of an energy revolution. In 2013, for the first time since colonial independence, access to power has increased. The situation is still complicated—in 2020 some 580 million people in the continent did not have access to power and the pandemic has slowed down new connections but the foundations are there for a process that for the first time is making universal access to power in sub-Saharan Africa (SSA) an achievable target. There is more to it: Africa can reach this milestone in its development in a fully sustainable way, skipping the intermediate steps most other regions, such as Asia and Europe, had to pass through in their electrification process—above all reliance on coal and fossil fuels. SSA can thus *leapfrog* from a situation of low or no access to power, to a fully accessible and green energy mix—a change that would dramatically transform not only the energy sector of the continent, but its economy and society as well.

LEAPFROGGING IN TELECOMMUNICATIONS

The leapfrogging concept was first applied to telecommunications in SSA. During the past decade, countries such as Kenya or Ghana witnessed an exponential growth of mobile connections, overcoming most European countries in terms of number of mobile phones per person (according to World Bank data) and thus bypassing the need to develop telephone landlines. Landline development has been an unsolvable issue for decades





PEOPLE WITHOUT ACCESS TO ELECTRICITY IN SSA

SSA has seen a steady decline in the number of people without access to electricity since 2013, due to reinforced access policies in countries such as Kenya, Senegal, Rwanda and Ghana. The COVID-19 pandemic reversed these advances in 2020, and the number of Africans without access continued to rise in 2021, to around 4 percent above pre-pandemic levels, reaching nearly 600 million.

Source: IEA

from access...

due to the troubles many African countries have faced in developing infrastructure. Matched with increased access to the internet, this in turn has strongly influenced education, access to finance (thanks to mobile money payments) and ultimately productivity and economies. However, the impact of Africa's energy revolution is much wider.

Despite the heterogeneity of African countries, many of them already show the impact of this extraordinary change. According to the International Energy Agency (IEA), 8 percent of Kenya's population had access to power in 2000, in 2018, 75 percent and in 2019, 84.5 percent. Ethiopia increased its energy access share from 5 percent to 45 percent in the 2000-2018 period, and Angola has more than doubled its share, reaching 43 percent of the total population. These trends are common to many African countries, particularly in the eastern side, and this has been mostly achieved through renewable energies and often through off-grid solutions that largely benefitted the rural population (the sector most effected by lack of power). This increase in access has already had a clear impact on the energy sector and beyond. Kenya is seeing a flourishing market for domestic solar systems and is witnessing



HYDROPOWER

Hydropower has been used in Africa for many decades, thanks to the presence of large rivers. With nearly 34 GW of capacity by the end of 2020, hydropower is the largest renewable energy source in Africa. In several African countries whose territory is crossed by rivers, hydropower accounts for half or more of electricity generation. The largest hydropower producers in Africa are Ethiopia, Angola, South Africa, Egypt, the Democratic Republic of the Congo, Zambia, Mozambique, Nigeria, Sudan, Morocco and Ghana. The map shows hydroelectric potential and installed capacity.

Source: IRENA, Renewable Energy Market Analysis 2022



SOLAR POWER

Africa has one of the greatest potentials in the world for solar power production. The continent receives average annual solar radiation of 2,119 kilowatt hours per square meter (kWh/m²). Irena estimates the continent's solar photovoltaic technical potential at 7900 GW. Despite the potential, industrial-scale solar power has only been implemented in a few countries. To date, however, solar is the fastest growing renewable energy source in Africa. The map shows solar photovoltaic potential and installed capacity.

Source: IRENA, Renewable Energy Market Analysis 2022



WIND POWER

North Africa, East Africa and Southern Africa are the most suitable regions for the development of wind power. Irena estimates the technical potential of wind production at 461 GW, with the greatest potential in Algeria, Ethiopia, Namibia and Mauritania. Countries with significant generation capacity include South Africa, Morocco and Egypt, as well as Kenya, Ethiopia and Tunisia, which together account for over 95 percent of the continent's total wind power generation capacity. The map shows wind power potential and installed capacity.

Source: IRENA, Renewable Energy Market Analysis 2022

...to potentiality

the birth of an industrial sector and the consolidation of its agricultural processing capacity (which is, however, still relatively small). The progressive shift from diesel generators to off-grid solar systems increasingly protects African countries from devastating oil price shocks. The fast deployment of renewables, their significant labor intensity and the development of local technologies (already explored by countries such as Kenya and South Africa) are some of the factors that demonstrate the vast potential for socio-economic impact of energy leapfrogging in the next decade.

Leapfrogging however does not simply promote the use of renewable sources, but requires a completely different approach to energy systems, one opposed to what has been historically applied by other regions in the world. Leapfrogging has different requirements, first and foremost flexibility in energy system design and an understanding that one-size-fits-all solutions do not work well because of Africa's variety of geographical and societal landscapes. The change must also be systemic and involve different sources, different distribution approaches (matching on and off-grid solutions) and different structures for energy markets and energy finance.

ALTERNATIVE ENERGIES ARE THE FUTURE

The key element that makes energy leapfrogging a concrete possibility for Africa is the huge renewable energy potential on the continent. Available estimates are still limited, yet data are very telling: the continent-wide theoretical photovoltaic (PV) potential amounts to 650,000 terawatt hours per year (TWh/y), a thousand times current consumption and mainly concentrated in eastern and southern Africa. For wind energy, a resource located primarily in northern and eastern Africa, recent estimates indicate theoretical annual productivity at 460,000 TWh/y. With around 35 GW of installed capacity and further potential, hydropower is traditionally the most exploited renewable source and the main source of power in countries like Mozambique vet it is also the source most vulnerable to climate change. The exploitation of this vast potential could grant universal access to power-currently only 50 percent of the African population is reached by electricity—and sustain GDP growth. All this while ensuring fulfilment of increasingly ambitious climate goals, including renewable energy targets that are included in 45 out of 53 African nationally determined contributions (NDCs).

While a renewable energy system (RES) endowment is high across the whole continent, the sub-Saharan region is the most promising for leapfrogging due to its low electrification infrastructure development and access to power, which allows direct implementation of a RES without facing the conversion process of a traditional existing one. Nevertheless, the continent is also endowed with large fossil fuels resources. In SSA 50 percent of total generation comes from fossil fuels, principally through diesel-fired generators (very common for instance in Nigeria) while the remaining 50 percent comes mainly from hydropower. The question is what energy sources will be used to extend access to the 580 million people living in the sub-Saharan region without electricity. In some contexts, the absence of viable domestic fossil resources or low prices and abundant supplies on global markets reduce incentives to drill for more. At the same time, in countries where economic growth is deeply tied to fossil fuels revenues, such as Nigeria or Angola, the case for RES is similarly compelling as it will reduce foreign dependence in a world transitioning away from polluting sources.

DECENTRALIZED ENERGY SOLUTIONS ARE KEY

The implementation of a RES-based electrification system to fuel the region's development requires a suitable architecture and technological solutions. SSA is characterized by a high level of population dispersion which, combined with limited grid expansion, creates a unique context where decentralized energy solutions play a pivotal role. These solutions include mini-grids and stand-alone systems powered mainly through solar and they represent more cost-effective investments in low density areas, where access to power is the lowest, thus contributing to rapidly reaching universal access. Data show that in SSA mini-grids and stand-alone systems could reach 20 percent of the total new capacity investments made by 2040.

These developments also require a sound and reliable set of regulations and support measures whose level varies greatly across countries. While a flexible architecture relying both on off-grid and on-grid solutions according to population density is the most effective approach, the expansion of the grid needs to be openly and reliably planned by national governments in order not to scare away private investments in off-grid solutions and create unsustainable competition (as on-grid generation is usually cheaper). Along with decentralization, digitalization is the other key factor supporting the leap towards a universal and RES-based energy system. Information and Communication Technologies (ICT) are playing a major role. Very high mobile ownership, often higher than 70 percent in SSA, is the key for uptake of RES-based decentralized solutions, especially in rural areas as it overcomes the lack of financial inclusion and banking systems, using mobiles as a payment and management tool for the use of stand-alone energy units (pay-as-you-go models). In addition, significant internet penetration in many SSA coun-



tries also creates remarkable opportunities in the energy sector, from the creation of interconnected energy-communities of engaged consumers, to data gathering and energy efficiency.

Beyond harnessing RES potential through decentralized and digital solutions, leapfrogging entails a wider transformation of the energy system, including structural market reforms. These reforms are critical to attract the necessary level of investments to implement the new energy system. Opening up the market to private investors is essential, yet still lacking across the continent. On paper, 29 out of 54 countries allow for private participation; however, most of them still have vertically integrated structures in the power sector and private investments are very limited. In SSA, only six countries have unbundled structures with a more significant role for the private sector (Angola, Ghana, Kenya, Nigeria, Uganda and Zimbabwe). The presence of an independent regulator monitoring the market is crucial, as well as adoption of key tools such as standardized Power Purchase Agreements, Feed-in-Tariffs systems, Public-Private Partnership laws and ad-hoc incentives (such as tax holidays, low-interest loans). Above all, RES-auction schemes—the latter currently used only in Ghana, Mauritius,



Victoria Falls, Zimbabwe. Hydropower is the largest renewable energy source used in Africa.



Electricians repair high voltage power lines for the national power grid in Johannesburg, South Africa. Africa needs a flexible architecture based on both off-grid solutions and on-grid systems, but national governments need to plan the expansion of the network in an open and reliable manner.



Solar panels on the roof of a training facility for solar technicians and energy auditors at Strathmore University in Nairobi, Kenya. Decentralized energy solutions are fundamental to energy access: mini-grid and stand-alone solarpowered systems that are the most cost-effective investments in lowdensity areas. © GETTY IMAGES

Uganda, South Africa and Zambia—are key to the deployment of renewables worldwide. Nevertheless, even when these tools are in place, other factors such as corruption, low implementation and unclear competences between multiple ministries and agencies involved can increase the perception of risk hampering private investments.

ONE STEP AWAY FROM THE GREAT AFRICAN ENERGY BREAKTHROUGH

Many are the obstacles that the "leapfrogging revolution" is facing, but the potential for this transformation is immense. It can boost end-use energy services demand, such as heating, clean cooking and electric appliances, and thus have a direct, immediate and robust impact on the living conditions of the population. It can act as a flywheel for the economy as a whole, from industry to agriculture, and promote the solid, long-lasting development many African countries, even the most politically and economically stable ones, have been seeking for decades. Furthermore, it will be key to achieve the global decoupling of growth from emissions, in a region where the improvement of welfare is fundamental, but whose unsustainable

development could additionally prove fatal for the world's fight against climate change. Achieving a successful energy leapfrogging in Africa would require changes in addition to those already highlighted, changes involving the international community, from the promotion of long-term investments to shifting the focus of development funds from the support of individual projects towards de-risking. As the world is approaching COP27, to be held in Sharm El-Sheikh, Egypt and likely focused on climate finance, 2022 may be the perfect time to seal this great turn for the continent.

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THE SILENT

INDOOR AIR POLLUTION CAUSED BY THE COMBUSTION OF BIOMASS FOR COOKING IS ONE OF THE GREATEST THREATS TO PUBLIC HEALTH AND SEVERELY AFFECTS THE ENVIRONMENT. GREATER EFFORTS ARE NEEDED TO GIVE PEOPLE IN AFRICAN NATIONS ACCESS TO CLEAN COOKING

OME CALL IT the silent killer. Others speak of silent suffocation. Still others go so far as to call it the invisible strangler. Household air pollution, also known by its English acronym fects the health of 2.6 billion people in the world. "Each year," HAP, is considered one of the greatest threats to planetary public health and is caused by exposure to indoor air pollution that results from the combustion of biomass. In simpler terms, it is nothing more than the pollution of household air caused by wood and coal fires for heating and cooking that are used in confined spaces and with little or no ventilation. Economically fragile countries are most affected by this phenomenon, and the silent killer's preferred victims are women and children, who spend most of their time at home. The phenomenon has tive pulmonary disease (COPD) and lung cancer.

a global reach and, according to the latest data from the World Health Organization (WHO) updated to 2021, negatively afclaims the WHO, "close to 4 million people die prematurely from illness attributable to household air pollution from inefficient cooking practices using polluting stoves paired with solid fuels and kerosene." The WHO also certifies that "close to half of deaths from pneumonia among children under 5 years of age are caused by particulate matter inhaled from household air pollution" and that HAP is responsible for non-communicable diseases such as stroke, ischemic heart disease, chronic obstruc-

by Massimo Zaurrini









Mozambique, Eni for clean cooking



Since 2018 Eni has been carrying out a project for clean cooking in Pemba City in Mozambique. The "Promoting Energy Efficiency and Clean Cooking" project aims at the production and distribution among the families of the community of 20,000 "improved" stoves, which reduce domestic air pollution. The improved stoves are produced by local microenterprises. The initiative, in addition to having positive implications for public health and creating jobs, contributes to reducing deforestation caused by cutting wood to produce coal for domestic use.



THE INCIDENCE OF HAP IN AFRICA

While the phenomenon affects the whole planet, the incidence of HAP is higher in Africa than in any other part of the world. Due to poor access to modern energy, especially in the rural areas of the continent, people still burn wood and other biomass for household use. In many of these rural areas, but also in poor areas and informal settlements in the main cities, the three stones method remains the most popular for preparing food, a method that involves arranging three large stones as a tripod on which to rest the pot, with a small fire lit in the middle. Nearly two-thirds of children in Africa (around 350 million) live in homes where solid fuels are used for cooking After having long been on the sidelines of international debate,

and heating. Although deaths from indoor air pollution have decreased by around 15 percent since 1990, the overall number of HAP deaths in Africa is still very high and in 2018 was set by the International Energy Agency (IEA) at over 500,000 people.

This is an estimated figure and according to some it should be revised upwards. This is the opinion, for example, of a recent study published in the prestigious medical journal The Lancet. According to this study, there were 697,000 deaths related to household pollution in Africa in 2019, a figure that represents 30 percent of those recorded worldwide.

since 2015 the phenomenon of HAP and, with it, the need to support a transition towards clean cooking (i.e., cleaner cooking systems and forms of household heating) have been the center of attention of international organizations and progress has been recorded in this area, especially in the number of deaths from HAP. But these are partial steps forward. According to the latest review of the progress towards achieving sustainability goal (SDG) 7 on access to energy in sub-Saharan Africa, not only have no improvements been reported, but a stagnant access to improved methods rate combined with rapid population growth has led to an increase in the number of peo-

million in 2010 to 890 million in 2018. The report-produced by a group of organizations including the IEA, the WHO and the World Bank Group-highlights the fact that the largest number of people without access to clean fuels and technology now live in sub-Saharan Africa, rather than Eastern and Southeast Asia. "If observed trends in access and population continue, it can be estimated that in 2030 sub-Saharan Africa will have the greatest access deficit, at around 44 percent of the region's total population. This represents a substantial geographic redistribution of the global access deficit and associated health, economic, and societal burdens. Future policies should take these trends into account," the report states.

Of the 20 access deficit countries identified by the agency, there are six in which the proportion of the population that has access to clean fuels is less than or equal to 5 percent, and these countries are all located in Africa: Democratic Republic of the Congo, Ethiopia, Madagascar, Mozambique, Uganda and Tanzania. According to a more recent World Bank study, the State of Access to Modern Energy Cooking Services, produced using "an expanded methodology to provide a more comprehensive measurement of household energy access and cooking solutions, the rate of access to modern sources of energy for cooking stands at only 10 percent in sub-Saharan Africa, 36 percent in East Asia and 56 percent in Latin America and the Caribbean."

DECREASE IN FUNDING

"Lack of progress in clean cooking is costing the world more than USD 2.4 trillion every year, driven by adverse impacts on health, climate and gender equality. Women bear a disproportionate share of this cost in the form of poor health and safety, as well as lost productivity," said Makhtar Diop, Vice President of Infrastructure at the World Bank. "This toll may increase in the ongoing pandemic as household air pollution, resulting from the use of highly polluting fuels and stoves, can make exposed populations more susceptible to COVID-19 and other respiratory diseases."

Funding pledges in this area from development partners and the private sector have recently dropped from USD 120 million to USD 32 million. The State of Access to Modern Energy Cooking Services estimates that "USD 150 billion is needed annually to reach universal access to modern energy cooking services by 2030. Of this amount, approximately USD 39 billion is required in public funding to ensure that the modern cooking solutions are affordable even for the poorest, while USD 11 billion is needed by the private sector to install downstream infrastructure for the functioning of modern energy cooking markets, such as distribution networks. The remaining USD 103 billion would come from household purchases of stoves and fuels. A less ambitious scenario of reaching universal ple still using traditional forms of cooking, from around 750 access to improved cooking services by 2030 requires USD 10



Today, some 900 million people in Africa do not have access to clean cooking.

Despite progress in several countries (e.g., Kenya, Ethiopia, Ghana, Senegal and Rwanda), current

A young woman prepares Injera, traditional Ethiopian flatbread. According to WHO, each year, close to 4 million people die prematurely from illness attributable to household

air pollution from inefficient cooking practices using polluting stoves paired with solid fuels and kerosene.



Mgahinga National Park, Uganda. In some areas of the country, the main cause of deforestation is the use of the forests by the local people to obtain wood for heating or cooking. and planned efforts to provide access to modern energy services barely cover population increase. In 2030, nearly one billion people will still not have access to clean cooking.

billion per year, including USD 6 billion from the public sector to fill the affordability gap and the rest by households."

The road to clean cooking still appears long and full of obstacles. The main problem is the lack of valid alternatives to traditional cooking systems. The study of stand-alone technologies, which is solar or biogas cookers, is expensive and still in the embryonic stage. The programs to replace the three stone system with similar pellet or biomass stoves have so far been left to the initiative of international and/or local non-governmental organizations, but they seem unable to carve out a space in the market. There is the emblematic case of Invenyeri, a social enterprise that had set itself the objective of providing families who cook on three stones with a high-performance and super fuel-efficient stove. Invenyeri was conceived by a group of American social entrepreneurs and developed in Rwanda thanks to donations from international organizations and foundations, attracting investments in the form of crowd funding in its early stages. Its business model as a social enterprise was characterized from the outset by an extremely large workforce, concentrated in the activities of marketing the product and promoting the initiative among the Rwandan population.

It was precisely this choice, based on what can be deduced from the company press releases announcing the liquidation of the company in April 2020, that was the main limitation to the scaling-up of the company. The final blow was the decrease in

investment flows towards Africa, which, following the spread of COVID-19, led to a collapse in the flow of liquidity to pay for current expenses and the consequent company liquidation. In particular, the decision to make stoves free for customers and the adoption of a pay-as-you-consume scheme based on the pellets used proved unsuitable for business development. The company was unable to get beyond the pilot programs carried out in refugee camps, was insufficiently financially supported by United Nations agencies and Inyenyeri collapsed. The difficulties encountered by Inyenyeri, as well as those of similar if not analogous experiences, also included logistical problems, an unstable energy regulatory framework and a diffident popular consciousness, factors lamented by other experiments attempted in recent years.

LPG AS AN ALTERNATIVE

Currently the most common alternative to using wood and/or coal for cooking seems to be the fossil fuel LPG—liquified petroleum gas—which in Africa is used by 70 percent of the population. According to a study conducted by the World Health Organization, LPG is the only hydrocarbon whose emissions fall within the established indoor pollution parameters. However, there are many complications in the use of LPG. The diffusion and availability of this fuel depends on state incentives, which are not always constant, and we need to consider the need for careful management of its transport and consumption.

Especially in urban areas, pilot projects for the creation of gas distribution networks have been undertaken for some years in the countries where it is possible, perhaps where production is associated with hydrocarbon extraction. Other proposals foresee increasing use of liquefied natural gas (LNG) to meet this need, seen likely because of the exponential growth of LNG use foreseen in Africa.

The clean cooking objective in sub-Saharan Africa continues to be the focus of many discussion tables engaging numerous private and institutional actors who cooperate through blended finance tools. The U.N. and the IEA finance various projects and promote solutions for clean cooking. There is also significant commitment by the World Bank, whose main initiatives are the Africa Clean Cooking Energy Solutions (ACCES) and the Energy Sector Management Assistance Program (ESMAP). The African Development Bank (AfDB) has also finalized its own New Deal of Energy and the Africa 50 strategy to ensure universal access to electricity in Africa by 2050.

In addition to the social drama surrounding HAP, its root causes also heavily affect the environment. In fact, many studies have begun to carefully examine the environmental damage caused by deforestation and high rate of CO_2 emissions. According to the UN forecasts, in 2050 Africa will be the continent with the highest population growth rate and this will lead



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to an exponential increase in energy demand by the population, thus creating further pressure on the continent's woodland and forest resources. "The issue of clean cooking is anything but secondary if we address the issue of deforestation. As regards Uganda, certain studies we have carried out have showed that the local populations' use of the forests to procure wood for heating or cooking is, in some areas of the country, the main cause of deforestation," said Ugandan Energy Minister Ruth Nankabirwa in a recent conversation during a visit to Italy. It is clearly urgent and imperative that we implement electrification, paying more attention to households to ensure access to affordable, reliable, sustainable and modern energy, as stated in

Goal 7 of the 2030 Agenda, including for women and children. This is the only way to stop this invisible killer.

MASSIMO ZAURRINI

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BEYOND STERE OTYPES by Roberto Di Giovan Paolo

AFRICA IS A GIGANTIC CONTINENT WITH A YOUNG POPULATION OF OVER ONE BILLION AND A DYNAMIC, GROWING AND FORWARD-LOOKING MIDDLE CLASS. WHAT IS NEEDED FOR POSITIVE CHANGE ARE POLITICAL STABILIZATION AND INVESTMENT

E DON'T HAVE TO KEEP LOOKING at Africa as the continent always on the edge of the abyss. Without losing sight of the present disparities, data analysis reveals 54 nations with a potential market of over one billion, 70 percent under thirty vears of age. Africa is home to over a thousand companies that have a total turnover between USD 500 million and USD 1 billion and many small and medium-sized enterprises that have created a middle class of 300 million Africans. Political and social stabilization and profitable investments can change the face of the continent in the future. Thinking about Africa, we can continue to consider the tragic path of its history, one that includes colonization after slavery, decolonization and economic

....



dependence. We must also understand the repercussions of the 54 nations that could physically contain the Americas and Eu-Cold War and the economic and political expansionism not only of the former colonizer nations but also the rampant engagement of China, now present everywhere, and a Russia that wedges itself into places suffering a crisis of representation and Western diplomacy, as is recently the case in Mali. Finally, Africa is too often seen as the receptacle of all poverty, the place from which men and women flee in search of a future, risking their lives and that of their children to escape a bitter fate.

POINTS OF VIEW

But we can also see it in another way. Africa is a continent of view can be really exciting.

rope plus China and India. It is still a young continent that will reach 2.5 billion people in 2050. Its pre-pandemic data revealed tax revenue of USD 500 billion, a total that is 10 times the development aid that comes its way (just under USD 50 billion). In addition, Africa annually receives over USD 60 billion in remittances from around the world. The big companies that lead international investments have for a long time monitored Africa and pondered its future, an attention equal to that paid by the agencies that deal with diplomatic, environmental and social development. Looking at it from this positive point of

Growing Africa





Naspers (SOUTH AFRICA) 2015 2 Anglo American Anglo America (SOUTH AFRICA) an Platinum Khartoum 4 FirstRand (SOUTH AFRICA) 5 Vodacom Group (SOUTH AFRICA) Lagos 6 Impala Platinum Holdings Kinshasa Luanda Standard Bank Group (SOUTH AFRICA) 5+ million Maroc Telecom (MOROCCO Greater 9 Safaricom Johannesburg 1 + millionmillion 10 Kumba Iron Ore (SOUTH AFRICA) 11 Sibanye Stillwater (SOUTH AFRICA) 2030 Alexandria Cairo 12 Capitec Bank Holdings (SOUTH AFRICA) **13** MTN Group (SOUTH AFRICA) Khartoum 14 South32 (SOUTH AFRICA **15** Attijariwafa Bank Laqos Ahidiar 89 Nairobi Kinshasa **16** Airtel Africa 17 Luanda 17 AngloGold Ashanti (SOUTH AFRICA) Antananariv 5+ million **18** Sasol (SOUTH AFRICA) 5 Greater Johannesburg¹ 19 Sanlam 1+ million (SOUTH AFRICA) million 20 Dangote Cement (NIGFRIA) ¹ Greater Johannesburg includes the City of Johannesburg, Ekurhuleni and the West Rand

Source: Statista 2022

THE BOOM OF MEGALOPOLIS

Africa has one billion and 300 million inhabitants of which 70 percent are under thirty years of age. According to McKinsey, in 2030 the continent will have 17 cities with over five million residents (up from six in 2015), five of which have over 10 million or more inhabitants.

> moted by international agreements and less military and civil conflict, the legacy of a ruling class which rightly rushed to independence but had no administrative experience. Per capita income ranges from USD 280 per year in Burundi to USD 15,000 in Seychelles. The average is around USD 2,000 a year, but that average is skewed by a handful of nations, especially South Africa, but also Ivory Coast, Ethiopia, Rwanda, Tanzania and Senegal. But some other states, despite holding important, fundamental resources for energy—such as Nigeria for example—or for the rare earth elements essential for the digital society, are still unable to adequately redistribute income. Yet, despite all the problems, even here there is a lever in the African middle class, today around 300 million people (Report McKinsey & Company 2018 and 2021) and found in about 30 of the 54 African countries. We can certainly distinguish between being middle class in Africa and in developed countries, but we are talking about the relative wealth of a quarter of the current population of the continent, which can serve as a hard core for growth and development in the coming MILLIONS OF PEOPLE years, provided that needed investments are made. When we look closely at sovereign wealth funds or private investment 5-10 >10 funds, the percentage of investment in Africa rarely exceeds the 10 percent bar and this appears shortsighted, even from a purely economic point of view, given that we are talking about a potential market of more than 1 billion and 400 million consumers under the age of thirty by 2050. THE FIRST STEP IS TO INVEST Here then is a first step to take by choosing to invest in the op-Addis Abeba

timism of a developing continent that can provide young workers who are eager to grow and learn. Let's be clear, we are not just talking about charitable or humanitarian development aid—which certainly must be provided—but real investments, made with a view to produce profit and concrete results in the real and financial economy. Contrary to common belief, in Africa we are not at year zero from an entrepreneurial point of view. There are (with the caveats expressed above) 400 companies on the continent that have a turnover above USD 1 billion and at least 700 with turnover over USD 500 million. These are large companies operating on regional or pan-African bases, of which more than half are entirely African in terms of ownership and 20 percent are state-owned, demonstrating that the space for post-colonial entrepreneurship exists and denies stereotypes. What is striking about these companies

We all know that there is a strong disparity of living conditions,

a problem also found in the rest of the world—just think of

Asian, Latin American or Arab countries—but in Africa the

levers of change are there and could soon be activated. If, in addition to remittances and African economic performance,

albeit too localized (50 percent of large African companies are

in South Africa), there were also strong private investment pro-





Sundown in Johannesburg. In the foreground, the illuminated Council Hall, a symbol of the revitalization and urban renewal of the district. In the background, the residential area of Hillbrow with the communications tower.



An Ethiopian Airlines Airbus A350. In ten years and before the new Ethiopia-Eritrea conflict, the company grew from 3 million to almost 9 million passengers with over USD 2.7 billion in turnover, and joined the Star Alliance (Lufthansa) establishing itself as the third largest African carrier after Egypt Air and South African Airways.



A young businesswoman in an office in Johannesburg, South Africa. In Africa, there are 400 companies that have a turnover of over USD 1 billion and at least 700 with a turnover above USD 500 million.

is the growth rate. Consider Ethiopian Airlines, which in ten years and before the new Ethiopia-Eritrea conflict, grew from three million to almost nine million passengers with over USD 2.7 billion in turnover. It has joined the Star Alliance (Lufthansa) and established itself as the third largest African carrier after Egypt Air and South African Airways. MTN, the mobile network operator based in South Africa, has reached over 270 million customers in 22 African countries, with growth and profitability rates equal to other Over the Top media services (OTT) in the rest of the world, perhaps even better in terms of economic return to shareholders. These examples highlight some basic conditions necessary for growth. It is clear to both the international and local banks of Monetary Funds and institutions that investment requires infrastructure, connections and political and administrative stability. It is no coincidence that the European Union has prepared a plan for EUR 3.3 billion in European funds intended to mobilize EUR 44 billion in private investments in African areas and regions that are "less inviting" to investors. The objective is to reduce poverty, but also to stabilize social and political administration, through investments in jobs and the creation of small and medium-sized enterprises with strict rules on human and workers' rights and on fiscal transparency and will also support the fight against climate change (over 28 percent of the economic commitment reserved for actions in line with the Paris Agree-

ment). It is a virtuous combination of grants, loans and public financial guarantees worth, as mentioned, EUR 3.3 billion, which act as a lever for the hypothetical EUR 44 billion (that in addition to the development aid from all sources—not just EU—for the whole of Africa) to encourage jobs, growth and stability and address at least some of the root economic causes of migration. And it is important how this European Plan agrees in its own guidelines with the guidelines of the African Development Bank (AFDB). For years the AFDB has sought to create the conditions for the arrival of investments relying on the economic value and not just social or moral assistance, which are a value in themselves but do not always guarantee the continuity of commitments.

A CULTURAL CHANGE OF PACE

In relation to Africa, there is also a need for a cultural change of pace. It is not a question of forgetting the historical faults of Europeans and Westerners, but of making up for them by seizing great opportunities in this phase of digital and ecological transition. Paradoxically, the birthplace of the first Sapiens, Lucy, is also a strategic place for these transitions. Africa is not only a painful place for humanity but a place of exploration for old and new energy sources and fundamental materials for technological innovation, as well as a green lung. Stabilizing the continent politically, making it a place of multilateral contact is not only an ancient political necessity but also the modern way to guarantee the economic growth and development that could still occur at a rate that is now unthinkable in developed countries, but without damage to the environment or to society, modifying and improving even the sense of the commitment of capital and business. It is truly a lovely prospect to have a future ahead that is free from thousands of years of clutter and ready to be built in the years to come. After all, the young Africa of Lucy's descendants, with positive action and positive thinking, expects it and deserves it.

ROBERTO DI GIOVAN PAOLO

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by Alessandro Lanza



THE CONTINENT COULD BECOME A LABORATORY OF REVERSE LEAPFROGGING, WITH A FASTER AND MORE INTUITIVE TRANSITION OF LOW-AND MIDDLE-INCOME ECONOMIES TO CIRCULAR AND RESILIENT PRACTICES. SUSTAINABLE URBAN PLANNING MUST BE A PRIORITY

> FRICAN IS URBANIZING at an incredibly fast pace. While world population growth is estimated to increase by two billion people over the next 30 years, the sub-Saharan African region is expected to double its population by 2050, with an increase in African cities of over 950 million people. Urbanization is a complex process of structural social, economic and environmental transformation, and the design of sustainable cities in Africa is one of the biggest challenges that the institutions of the continent, especially in the sub-Saharan region, will have to face in this century. In Africa, much of the growth is occurring in small and medium-sized cities, and urban agglomerations are too often developing without adequate policies or investments to address this challenge.

HOW TECHNOLOGY CHANGES THE WORLD OF WORK

One relevant aspect that must be considered is the transformation of the nature of work as a result of increasing urbanization. Urban concentration transforms labor and requires the acquisition of new skills to successfully enter new markets, and technological progress has had an accelerated effect on the labor market in the past 20 years. The so-called gig economy has seen a massive expansion of global value chains through which the production process becomes global and the geography of jobs transcends traditional business boundaries. While this change makes work more accessible and flexible, the progressive digitization and technologization of work has an unavoidable downside, as countries that fail to keep pace with this change pay the drastic consequence of exclusion.

On this specific issue, Africa is at a crossroads. Consider two significant data: First, agriculture—a sector characterized by low productivity and worker poverty—is still the most important source of employment on the continent and represents 57 percent of total employment (2017 World Development Indicators, World Bank). Second, the labor market in sub-Saharan Africa is still predominantly informal, and this accounts for 80 percent of total employment (World Bank 2020).

Emerging countries are encouraged to join the new digital market thanks to the convergence between the informal sector and the gig economy, facilitated by a gray area within their respective regulatory frameworks that becomes a fertile ground for the cre-

67

Digitization and work

2045

2040

2035

2030

2025

2020

The informal sector has been for decades the main engine of employment growth in Africa, absorbing the increase in the urban population. This sector has enormous potential: that to simplify access to the new digital market, thanks to the convergence of the informal sector and the gig economy, facilitated by a gray area, within the respective regulatory frameworks, which becomes a fertile ground for creation of services that spread rapidly where there is access to digital infrastructures.



INFORMAL WORK AROUND THE WORLD

In sub-Saharan Africa, nearly 90 percent of the workforce is in the informal economy. In fact, it is the area in the world that has the highest proportion of informal work, against the lowest proportion—less than 15 percent—found in Organization for Economic Co-operation and Development (OECD) countries.





in OECD countries.

INFORMAL LABOR AND GDP

The informal economy accounts for nearly 40 percent of GDP in sub-Saharan Africa, compared to just 18 percent of GDP

Source: Medina and Schneider (2018)

WHO HAS ACCESS TO THE INTERNET IN THE WORLD

In the 2021 ranking of regions with the highest Internet penetration rate, it is clear that Africa is still very far from the levels of digitization achieved in other areas of the world. Less than half of the population has access to the Internet (43.2 percent).

Source: Internet World Stats

	(Penetration Rate)
NORTH AMERICA	93.9%
EUROPE	88.2 %
LATIN AMERICA/CARIBBEAN	75.6%
MIDDLE EAST	74.9%
OCEANIA	69.9%
WORLD AVERAGE	65.6%
ASIA	63.8%
AFRICA 43	3.2 %

ation of rapidly spreading services in places where there is access to digital infrastructures (World Development Report 2019). Today countless basic needs such as housing, mobility, food distribution, access to water and energy for millions of people living in urban areas in Africa are guaranteed services made available by small businesses in the informal sector that compensate for the delay or absence of formal interventions.

It is clear that an investment in human capital and the improvement of infrastructures and services in cities can be a formidable stimulus of economic and social growth for its metropolises, supporting these informal and fragmented markets with solutionstechnological, financial, political—favoring the inclusion of millions of people in the formal labor market. This is especially true for young people and women who, for example, in West Africa represent between 68 and 90 percent of informal workers (African Union Commission/OECD 2019).

SUSTAINABLE URBAN PLANNING IS POSSIBLE

Imagining an African metropolis of the near future inevitably means investigating its possible strategy in terms of resilience and circularity. Already several African cities bear witness to significant cases of circularity and sustainability, supported by practices adopted to promote sustainable consumption and production and to respond to environmental shocks.

Urbanization in Africa could therefore represent a laboratory of reverse leapfrogging: The transition of low- and middle-income economies to circular and resilient practices could be more intuitive and immediate than their high-income counterparts, requiring fewer behavioral changes thanks to the convergence between the informal sector and the new generation of digitization. Africa's urban transition therefore offers great opportunities but poses significant challenges.

Sustainable urban planning in Africa that focuses on strengthening human capital can significantly contribute to the continent's economic development, improve social conditions in marginalized areas and increase resilience to both climate change and extreme climate events. we

ALESSANDRO LANZA

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69



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AFRICA, A FAST-PACED CONTINENT WITH A DESIRE FOR EXPERIMENTATION, IS LIGHT YEARS AWAY FROM THE CERTAINTIES AND SLOW PACE OF THE RICHEST AREAS OF THE PLANET. THE IDEAL STAGE FOR ALL KINDS OF TECH ACCELERATORS AND STARTUPS

OOKING AT THE CITY OF DAKAR from the window of the TER gives you a cross section of Africa that is an example of a complex and different whole. TER stands for Train Express Regional, a double-track railway line that only recently has connected the capital of Senegal to Diamniadio. The expansion of the city was conceived in the light of TER, as growth was no longer possible in the narrow peninsula, and it is now the heart of Dakar and the westernmost point of continental Africa. Diamniadio will host ministerial offices and residential areas and is already operating a multipurpose facility with 15,000 seats (Dakar Arena), the Center International de Conférences Abdou Diouf, which hosted the World Water Forum last March, and a 50,000 seat stadium.

Outside the window of the TER, several Africas pass by at the same time: the one best known to the West is poor and busy, making do with selling merchandise of all kinds; the modern one you see in transactions made via mobile phone, the wireless earbuds worn by the younger generations and the modern cars that defy the crowds in the noisy and fragrant spice markets.

Taking a snapshot of this scene would be impossible, as it is too fast-paced for any lens. And this is true for Africa in its entirety: it is impossible to halt in a photo or explain in an image. This is a fast-paced Africa, which is increasingly connected and motivated by a desire for experimentation and light years away

planet. It is an ideal stage for tech accelerators and startups that push to define Africa as a continent of organic innovation.

Leapfrogging is a tangible and amazing experience in Africa. Let's say you visit an archaeological site in Sudan, perhaps a site of secondary importance, and you pay for your ticket via a point-of-sale (POS) terminal pulled out from a dusty drawer. You would never have bet that drawer housed a piece of technology capable of taking payment and printing the receipt for a visit to the remains of the ancient civilizations that inhabited the areas around the pyramids of Meroe.

Indeed, the technologies applied to mobile telephony can be considered the first leapfrog that has had a profound impact on African economies and societies. In just a few years, starting from urban contexts, we have gone from old mobile phones to a widespread use of smartphones. While it is true that rural contexts are different from urban, money transfer services can be used with old mobile phones and have made it possible to use financial and payment services without having to go through banks and credit cards.

AFRICA IS A "MOBILE" REGION

According to the United Nations International Telecommunications Union (ITU), mobile cellular coverage in Africa is estimated to be nearly 90 percent. Conversely, the penetration from the certainties and slow pace of the richest areas of the rate of fixed network subscriptions is low, due to the lack of in-

The revolution of mobile networks

According to the United Nations International Telecommunications Union, mobile cellular coverage in Africa is estimated to be nearly 90 percent. Conversely, the penetration rate of fixed network subscriptions is low, mainly due to the lack of infrastructure. An analysis by the Tim Research Center on the correlation between broadband penetration and economic development in Africa found an economic impact of 2.5 percent of GDP for every 10 percent increase in mobile broadband penetration.









frastructure and the lower costs of wireless broadband infrastructure. In 2019, taking the year before the pandemic as a reference, 0.5 people out of every 100 were connected to a fixed network, a figure well below the global average of 14.8. In the same year, in the 39 countries of the continent examined by the ITU, there were instead, on average, 80.1 mobile phone subscriptions for every 100 people, but 17 states more than exceeded 100 and 14 of these were higher than the world average (Seychelles, South Africa, Botswana, Mauritius, Ivory Coast, Gabon, Ghana, Morocco, Tunisia, Mali, Namibia, Senegal, Algeria and Cape Verde). There were 32.1 mobile broadband subscriptions per 100 people compared to a world average of 75, a number surpassed, however, in nine African countries: South Africa, Ghana, Algeria, Gabon, Seychelles, Botswana, Mauritius, Tunisia and Cape Verde.

From this point of view, there is an interesting report by the Technology Integration Matrix (TIM) Research Center "Digitization and economic development: the case of Africa, an empirical assessment." The report notes that technological talent in Africa has reached an all-time high and continues to grow. The continent has nearly 700,000 professional developers, over 50 percent of whom are concentrated in five markets: Egypt, Kenya, Morocco, Nigeria and South Africa. This growth of the IT ecosystem, coming from both formal and informal training, has pushed local entrepreneurs to develop those transversal skills essential for the launch and management of startups and has increased the demand for employees capable of tackling the cultural and language differences among regional markets.

A worldwide broad econometric analysis conducted by the TIM Research Center showed the correlation between broadband penetration and economic development and highlighted the greater impact of mobile broadband (MBB) than fixed broadband (FBB) in less developed countries. Applying the same method regionally across 34 African countries, the authors note an economic impact of 2.5 percent of GDP for every 10 percent increase in MBB penetration, equivalent to a contribution of USD 277.7 billion in 2019 and USD 1.120 trillion for the overall period 2010-2019. North Africa is the region in which broadband has the most significant economic impact, while, in terms of individual countries, South Africa comes out on top.

FROM THE DIGITAL REVOLUTION TO THE ENERGY REVOLUTION

This revolution—because this is what it is—started from mobile networks but has paved the way for further implementations, a long wave that seems very far from stopping and that has the advantage of providing very concrete results. This is evident in the energy sector and there are many examples. One of the most successful rural experiments is tied to renewables, which are brought to production centers, more

73





Somali girls having fun surfing the net on a smartphone. In Africa, nearly 90 percent of the population is covered by the mobile network. About 24 percent of women use the Internet.



An African agricultural entrepreneur uses a tablet to monitor vegetables Access to energy combined with the spread of modern technology has led to a real revolution in rural areas.



Two female scientists at work in a laboratory in Johannesburg, South Africa.

than homes, with prepayment schemes linked to mobile applications.

In Gitaza, Burundi, a trader named Laurence installed two refrigerators and started selling ice cream. His initiative has borne fruit, and his income has grown. Like Laurence, another 121 traders are busy in the market located on the shores of Lake Tanganyika, about thirty kilometers south of Bujumbura. The breakthrough came thanks to the arrival of electricity as part of a project funded by the Italian Agency for Development Cooperation (AICS) and conducted in the field by the Institute for University Cooperation (ICU), an Italian nongovernmental organization. Access to energy has quickly transformed the life of this fishing community located along the road from Burundi to Tanzania. People in this village can now store fish and other products that arrive here, which would have previously gone bad in a few hours or days. At the end of the project, the benefits will reach at least 100,000 people. The particularity of this initiative compared to other similar ideas is deciding to bring energy through local minigrids not to homes but to the trade center; if bringing electricity to a home implies benefits limited to that individual dimension, bringing electricity to production and commercial areas enables immediate economic and social growth that is much more incisive and enjoyed by everyone. The use of solar panels

mobile phone payment systems for electricity consumed (access to energy is not free and is managed by the national utility), clearly demonstrates the development opportunities possible today thanks to technology.

A RANGE OF OPPORTUNITIES

The link between the development of mobile networks, energy access and money transfer is clear but does not cover the full range of opportunities that have been opened up. So, while it is true that in just a few years Africa has transformed from the least banked continent in the world into the vanguard of mobile money, there are also several other fronts that have gradually been developed during this time. One of these is certainly financial technology (fintech), an approach that is attracting substantial foreign investment. South Africa, Egypt, Nigeria, Ghana and Morocco are the countries with the greatest number of companies of varying size, some of which have attracted significant international attention. Recently, the Nigerian firm Flutterwave secured funding for USD 250 million, money that will be used to transform the way Africans make transactions across the continent by supporting the growth of the business, innovation and technology landscape. But there are others like Rwanda, which, with the support of MyGrowthFund Venture Partners led by South African businessman Vusi Thembekwayo, has gone further by launching the first African fund exclusively dedicated to investments in African fintech startups, with an initial capital of USD 50 million.

Rwanda has also made innovation a principal focus and inaugurated the first African hub of the Norrsken Foundation, a Swedish investment fund that offers coworking spaces to startups hoping to take their first steps. The hub has a capacity of 250 spaces, to reach 1,000 by December 2022.

BEYOND CRYPTOCURRENCIES

Among the technologies with significant impacts and trends of marked growth there is blockchain. Going beyond cryptocurrencies, which are one of the fruits of blockchain platforms, this technology has significant function and application potential in sectors that benefit from the open-source nature of the software. Some international companies specializing in offering solutions via blockchain have already chosen to work with African governments and institutions. Thanks to the blockchain of Cardano's Atala Prism project, for example, five million students in Ethiopia will have their identity documents and school results stored securely. The Ethiopian government has signed an agreement to create a national registry database for students and teachers at 3,500 schools using a decentralized digital identity solution. It is one of the largest blockchain deals ever signed by a government and its importance transcends the education sector. Digital identity is absent in most combined with other innovations, such as smart meters and African countries, and it may instead be the first step towards



true financial inclusion, which in turn has been shown to bring help farmers make better use of water resources. IBM's well-esother benefits.

Blockchain could also facilitate contracts and land registry registrations. In West Africa and Kenya, this technology has already enabled initial checks of real estate and transaction records and expanded access to credit in some previously informal sectors of the economy.

BUT THERE IS ALSO ARTIFICIAL INTELLIGENCE

Artificial intelligence solutions have begun to appear in two sectors that are as troubled as they are essential, namely healthcare and agriculture. The healthcare sector is one of the most promising, according to Brookings' Foresight Africa 2020 report. Artificial intelligence can help staff and healthcare facilities do more with fewer resources by automating certain tasks. There is talk of speeding up initial data processing, triage, diagnosis and post-care follow-up. MinoHealth AI Labs, in Ghana, applies artificial intelligence to radiology thanks to an image database and deep learning for detecting hernias, tumors and pneumonia.

Then there is agriculture. This sector is also experimenting with the help offered by artificial intelligence to prevent crop diseases. The Cameroonian company Agrix Tech licenses a phone app with which farmers can scan a sample of a diseased plant to see possible solutions. Artificial intelligence can also

tablished EZ-Farm uses sensors to collect data to monitor crop health and provide irrigation recommendations.

However, there is still a long way to go. Of the 32 African countries that responded to a UNESCO survey in 2020, only 21 considered this technology a priority in their national development plans. In addition to policies and investments, good practices are necessary; in Africa there is still a lack of a generalized culture of data (and the legislation necessary to protect them) and in many cases the data themselves, without which artificial intelligence cannot work.

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by Ruben David

CONTINENT HAS CONTRIBUTED RELATIVELY LITTLE TO GLOBAL GREENHOUSE GAS EMISSIONS IT IS AMONG THE AREAS MOST EXPOSED TO THE NEGATIVE EFFECTS OF CLIMATE CHANGE. THE SUPPORT OF THE INTERNATIONAL COMMUNITY IS OF PARAMOUNT IMPORTANCE FOR SUCCESSFUL ADAPTATION

ALTHOUGH THE AFRICAN

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HE INTERGOVERNMENTAL PANEL on Climate Change (IPCC))—the most authoritative international body on the scientific study of the issue—has recently released the second part of the Sixth Assessment Report (AR6 WG2), which quantifies the impacts of climate change and assesses the vulnerabilities and the capacities of both the natural world and human societies to adapt to its adverse effects. Within this report, the IPCC produced a series of in-depth studies dedicated to quantifying the impacts of climate change on society and ecosystems across the different regions of the world. From the regional focus on Africa the main message that emerges is as much dramatic as already well-known: the continent has contributed among the least to greenhouse gas emissions, yet key development sectors have already experienced widespread losses and damages attributable to anthropogenic climate change, including biodiversity loss, water shortages, reduced food production, loss of lives and reduced economic growth. Moreover, the IPCC assesses that limiting global warming to 1.5 degrees Celsius is expected to substantially reduce damages to African economies, agriculture, human health, and ecosystems compared to higher levels of global warming.

WHO IS RESPONSIBLE FOR THE EMISSIONS?

The harmful effects caused by the increase in emissions affect all countries and all peoples, regardless of who is most responsible for it. In fact, there is no correspondence between those who emit the most and those who suffer the most from the consequences of those emissions. Although many African countries are among the most exposed and vulnerable to the adverse effects of climate change, their contribution to the problem is limited in terms of both historical and current emissions. The entire African continent is responsible for barely 3 percent of cumulative emissions over the period from 1750 to 2021. The United States is historically responsible for 25 percent of emissions, the 27 countries that currently form the EU by 22 percent, China by 12.7 percent, Russia by 6 percent, and India by 3 percent.

Africa's impact on climate alteration has always been marginal, contrary to other parts of the world that have dramatically increased their relative share in recent times. At the beginning of the last century, Africa accounted for 0.12 percent of global emissions; by 1950 its quota rose to 1.5 percent, while at the beginning of the new millennium it was at 3.5 percent. For a large part of the 20th century, Europe and the U.S. were by far the major emitters. If in 1900 over 90 percent of emissions originated from these two regions, their share fell to 85 percent by 1950 and to a little less than 50 percent in 2000. This downward trend has been counterbalanced by the rise of emissions by a small group of emerging economies, particularly across Asia, most notably China—which today is the world major emitter. On the contrary, throughout this period the rise of emissions by African countries has been decidedly limited.

Current emissions figures paint a different picture compared to the historical one, with China making up the leading emitter with around 28 percent. In second place are the U.S. with 14 percent, followed by India with 6 percent, Russia with 5 percent and Japan with 4 percent. The EU accounts for 8 percent. Today Africa constitutes an insignificant source of climate-altering emissions, accounting for only around 3.9 percent of global emitters. Only South Africa, the biggest African emitter, exceeds 1 percent of the world's overall emissions, while the rest of the continent produces marginal amounts.

VULNERABLE TO CLIMATE CHANGE

The mismatch between Africa's condition as one of the minor contributors to the problem and yet one of the most vulnerable regions to its adverse effects represents is one of the paradoxes of global climate politics.

The compound effect of geographical, socio-economic and political-institutional factors makes Africa one of the most vulnerable continents to climate change, together with other areas of the world such as Southeast Asia, Central and Southern America and small island developing states.

Indeed, the greater exposure of Africa to climate change compared to other regions does not depend only on its geographical position and its territorial conformation, but also on the poor socio-economic conditions and the fragile institutional and political governance structure plaguing many African countries. This means that climate change is burdening an already fragile context, aggravating Africa's "multiple stresses": food insecurity, biodiversity loss, political instability and conflicts.

THE FOOD-CLIMATE NEXUS

Many African countries depend on agriculture as their main economic driver: as such, they are particularly susceptible to climate change, which endangers crops productivity and jeopardizes the livelihoods of people and communities. According to the Sixth assessment report by the IPCC, agricultural productivity growth in Africa has already been reduced by 34 percent since 1961 due to climate change, more than in any other region. Higher temperatures will further stress the food system by shortening the growing season of crops and by placing even in particular for the most vulnerable areas.

more stress on the water system. Since around 60 percent of the sub-Saharan population depends on agriculture for survival, food insecurity is intensified by changes in rainfall cycles, and in planting and harvesting seasons. To make matters worse, new forecasts predict that sea level rise will threaten vulnerable coastal communities through flooding and erosion, salinization of farmland, and disruption of inland and coastal fisheries.

THE MIGRATION-CLIMATE NEXUS

Migration and human displacement

may also increase in numbers as floods, droughts, and storms increase because of climate change. So far, most climate-related migration in Africa occurred within countries or between neighbouring countries. According to the data provided by the IPCC in the report (AR6 WG2), in sub-Saharan Africa in 2018 and 2019 there were respectively 2.6 and 3.4 million new weather-related displacements. These numbers are destined to grow because of adverse effects related to climate change. The estimates provided by the IPCC in the document indicate that with 1.7 degrees Celsius global warming by 2050, 17 to 40 million people could migrate internally in the continent, and these migrants could become 56 to 86 million 2.5 degrees Celsius.

THE SECURITY-CLIMATE NEXUS

Furthermore, there are also security risks related to climate change as it may become a multiplier of conflict by creating com-

livelihoods. Thus, the combination of a growing population, scarce resources, weak governance and climate change exacerbates the likelihood of a resurgence of armed conflict in Africa.

ADAPTING TO AN ALREADY CHANGING CLIMATE

Keeping the global average temperature increase below a certain threshold is at the heart of the U.N. climate regime. The Paris Agreement (2015)—which regulates climate change at the international level in the post-2020 period—aims to keep the global average temperature rise below 2 degrees Celsius compared to preindustrial levels and invites the parties to make greater efforts to limit the increase to 1.5 degrees Celsius. Some of the damages caused are already irreversible, but according to the IPCC every tenth of a degree above the indicated threshold limits will lead to further serious impacts on ecosystems and societies. This estimate is valid overall for the entire globe, but



Besides the mitigation efforts that marginally involve Africa, what really affects several African countries is adaptation to climate change, which is already manifesting its disruptive effects on its peoples and ecosystems. However, many Sub-Saharan countries have relatively low adaptive capacities in terms of expertise, technology, and finance. The high level of debt and low "fiscal space" of many African countries constrain their capacity both to create resilient systems through local investments on adaptation and to mobilize capital for the transition to a decarbonized economy.

Thus, the support of the international community plays a key role

Under the Paris Agreement, developed countries are bound to provide financial resources to assist developing countries for both mitigation and adaptation (art. 9.1). During the negotiations at the 2021 U.N. Climate Change Conference (COP26), many of the contentious issues under discussion on climate finance were on which concrete form to give this provision. The final agreement—the Glasgow Climate Pact—notes with "deep regret" that rich countries have missed the 2020 target of providing USD 100 billion annually to assist developing countries and it commits them to collect at least an equal amount, every vear, until 2025.

Considering the real needs of many developing and poor countries-including African ones-the compliance with the USD 100 billion target has a more symbolic value than an actual one. petition over increasingly scarce resources people rely on for their It is, in fact, a minimum requirement, as it takes trillions rather

Climate change has shortened the rainy season and made it more dry and the amount of rainwater collected from the river is not enough to balance the salinity of the water from the Atlantic Ocean, causing serious damage to rice crops.

Fishing boats on the Gambia River.



Cooperative of fruit and vegetable producers in Meki Batu, Ethiopia. In many African countries, agriculture is the main driver of the economy; climate change, which puts crops at risk, threatens the livelihoods of individuals and entire communities.



Plastic polluted waterways in South Africa. In the background, Table Mountain. The production, incineration and disposal of plastics add more than 850 million tons of CO₂ to the atmosphere every year.



than billions to undertake a just transition towards decarbonized and net-zero socio-economic systems.

Furthermore, the Glasgow Climate Pact establishes that developed countries should at least double their collective support for adaptation measures by 2025 from 2019 levels, to help developing countries prepare for the negative impacts of climate change already underway. If complied with, resulting adaptation funding could rise to around USD 40 billion annually, up from USD 20 billion in 2019. Given that currently only around 25 percent of international climate finance goes to support adaptation measures this could represent a real improvement, which, even if fully respected, is not sufficient to cover the real investment needs that developing and African countries would require. Nevertheless, this is an important political signal for future negotiations.

All these issues that play a fundamental role for the future of many African countries and for their capacity to transform into climate neutral and resilient societies will be at the center of COP27, which will take place in November 2022 in Sharm El-Sheikh, Egypt—the fourth African country to host the annual event since 1995.

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by **Robert Dewar**

WHATEVER THE ENGAGEMENT OF OTHER COUNTRIES

on the planet's side, as a recent and very grim report of the Intergovernmental Panel on Climate Change (IPCC) makes clear. What happens on the ground in the coming months can therefore make a real difference. In this article, we will consider polit-



Sossusvlei, a desert area located within the Namib-Naukluft National Park, in Namibia. The IPCC reports that the past twelve months have been a climate challenge for Africa, with floods, heat waves, droughts, crop losses and ocean warming.



Aerial view of the Okavango Delta Botswana. Climate change is reducing the volume of water reaching the delta, due to increased evaporation of water from the rivers that flow into it.



An engineer cycles past the solar panels at the Ain Beni Mathar solar power plant in Morocco. With mobile technology, Africa has leapfrogged and overcome what are now obsolete practices. And it can make another big leap with renewable energy, smart agriculture, transportation and innovative buildings.

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ical will and actual performance by governments, world bodies, cities, the private sector, academia, communities and individuals in their daily lives.

Is climate change an urgent issue for Africa? Yes. Even more than in other continents, the impact of climate change in Africa is a lived daily reality.

THE BALANCE OF THE LAST YEAR

It has been a bad twelve months, and Africa's unique vulnerability was highlighted by the IPCC report. Flooding, heat waves, drought, crop losses, warming oceans, disease and conflict related to these climate pressures have had a harsh impact. Taken together, they added layers of vulnerability to a continent already damaged by the COVID-19 epidemic and exacerbated levels of public debt and global vaccine inequality.

To give one example, repeated floods from violent storms have In parallel the African Union (AU) Commission Chair, Moussa damaged Mozambique, and the impact of the almost forgotten drought in southern Madagascar might be described as the world's first climate change famine.

But positive change is producing progress on Africa's priorities. We can hope that COP27 will once again increase emission reduction commitments, a process that needs focused attention. After Glasgow's COP26, there remained a big gap between pledges and commitments and what is needed to keep the 1.5 degrees Celsius target from falling off the table at some point. We are already at 1.1 degrees Celsius. But, from Africa's viewpoint, ingredients do exist for progress.

There is new consensus that forward-thinking adaptation finance should be combined 50/50 with mitigation that deals with existing problems. Financial pledges have been made, however disappointing their timeliness and scale to date. Mechanisms for Article 6 carbon trading and loss and damage finance (finance focused on permanent and irreversible losses) are now in place to be built on. Can Africa commence a carbon market? Can the debate on loss and damage make practical progress, in the light of an IPCC report that endorsed this concept? Pledges were made on nature- based options too, even if apart from the formal COP26 sessions, options such as the prevention of deforestation and conservation of eco-systems and the Congo Basin carbon sink. If global consensus can lead to new conservation targets of 30 percent or more of land and sea areas, can that give momentum to stronger nature-based commitments at COP27, to Africa's advantage—provided that its high rate of deforestation can be reversed?

A BATTLE ON TWO FRONTS

A battle on two fronts could and should be waged in the next seven months. First, delivery by developed country partners and international institutions, development banks and the private sector to do what they promised at Glasgow-or more. Reputation is at further risk if the outcome is underwhelming. The G7 and G20 meetings chaired by Germany and Indonesia respectively will be important. Hopefully, global disruptions like the Russia-Ukraine conflict will not provide fresh excuses for giving climate change lower priority. The virus crisis has already affected progress, not least because of its impact on developed country budgets.

Second, urgent action by Africa itself, now that COP26 has built a better platform. Can Africa exploit the opportunities? African Heads of State have stepped up by agreeing to a new climate change and resilient development strategy. And key states are vigorously promoting their goals. For example, President Kenyatta, the new African Heads of State Climate Change Committee (CAHOSCC) coordinator, says Kenya wants a shift to 100 percent renewable energy by 2030 and 100 percent access to clean cooking by 2028.

Faki, says "domestication" of the Paris Agreement by African states is under way. These steps towards implementation should include country level climate legislation; plans for long term strategies towards net zero; the promotion of more ambitious Nationally Determined Contributions (NDCs) if that is possible; and the transformation of NDCs (including the portions conditional on external support) into investment opportunities. Many countries seek technology transfer and help to industrialize.

Impact and risks of climate change

While Africa is one of the smallest emitters of greenhouse gases, its key development sectors have already experienced widespread losses and damage due to anthropogenic climate change. The main sectors affected and the prospects in relation to global warming hypotheses are given below, according to the latest report from the IPCC.

MIGRATION

Most climate-related migration in Africa occurred within countries or between neighboring countries. With 1.7°C of global warming by 2050, 17–40 million people could migrate internally, and with 2.5°C of global warming, this would rise to 56-86 million.

CITIES AND SETTLEMENTS

In Africa, high population growth and urbanization in low-elevation coastal zones will be a major driver of exposure to sea level rise in the next 50 years. By 2030, 108-116 million people will be exposed to sea level rise in Africa.



WATER

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across Africa have had largely

egative and multi-sector impacts

across water-dependent sectors

Cross-cutting risks are expected

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CULTURAL HERITAGE

African cultural heritage is already at risk from climate hazards, including sea level rise and coastal erosion; most African heritage sites are neither prepared for, nor adapted to, future climate change.



ECOSYSTEMS

-30%

Biodiversity loss in Africa is projected to be widespread and escalating with every 0.5°C increase above the present-day global warming Above 1.5 °C, half of assessed species are projected to lose over 30 percent of their population or area of suitable habitat

FCONOMY

Climate change has reduced economic growth across Africa. Across nearly all African countries, GDP per capita is projected to be at least 5 percent higher by 2050 and 10-20 percent higher by 2100 if global warming is held to 1.5°C versus 2°C.

INTERNAL ENVIRONMENTAL MIGRANTS BY 2050 **17/40** million

-34% AGRICULTURAL PRODUCTIVITY COMPARED TO 1961

FOOD

Agricultural productivity growth has fallen by 34 percent since 1961 due to climate change, more than in any other region of the world. Global warming above 2°C will result in a yield reductions for staple crops across most of Africa compared to 2005. Marine and freshwater fisheries are also at risk.

HEALTH

Mortality and morbidity will escalate with further global warming. At 1.5°C of global warming, distribution and seasonal transmission of vector-borne diseases is expected to increase, exposing tens of millions more people, mostly in East and Southern Africa.

Source: IPCC, Sixth Assessment Report, 202.

African-based institutions such as the AU, United Nations Economic Commission for Africa (UNECA), African Development Bank and United Nations Environment Program (UNEP) are putting their shoulders to the wheel, focusing on technical capacity and financial support, working up key projects and helping build consensus on policy to guide the African Group of Negotiators. How is green policy to be designed in a rapidly changing continent?

GREEN POLICY IN A RAPIDLY CHANGING CONTINENT

its priorities. Africa is vast and has different local and regional contexts. Policy coherence is thus a challenge. Middle income countries may enjoy greater capacity than poorer-and often more vulnerable-neighbors. Conflict, instability and corruption concerns, where they exist, deter investors. Investor confidence can be influenced by the rule of law and supportive legislation. But, as the IPCC has emphasized, climate resilience cannot be divorced from the sustainable development framework. An integrated systemic approach makes sense.

Given the power of African Presidents, their showing strong Grasping the agenda makes sense, but each state must decide on ownership of climate action, using national budgets to this end



and setting favorable local conditions for investor confidence would help change the game. Another challenge is to promote voter enthusiasm. Support for climate action must include the delivery of livelihoods and sustainable jobs, and evidence must be provided that demonstrates why fossil fuel subsidies don't make national sense. With mobile technology Africa has leapfrogged old practices. With renewable energy, smart agriculture and innovative greener transport and buildings for Africa's burgeoning cities, it can do so again, although vested interests need to be addressed.

ENERGY AND FINANCE

Clean energy is a huge opportunity, not least because the technology has gotten ever cheaper. With more than 500 million African citizens still without electricity access, transforming to clean energy grids would be a productive investment and also part of the solution to resolving what to do about fossil fuels while avoiding stranded assets.

At COP26, South Africa set an important example by reorienting its energy supply away from coal with a USD 8.5 billion "just transition" agreement. Multinational oil companies should choose to be part of the solution, embracing net zero targets and supporting just transitions.

At COP26 and before, much attention on finance focused on the USD 100 billion annual figure to be transferred from developed to developing countries, a target that won't be met until 2023. Some think this magic number obscured practical questions including delivery mechanisms to track the money and make sure it reaches the poorest and improves community involvement in its use. Quality of the funds is also important more grants and soft loans—as well as much more private sector money with innovative mechanisms. If conditions were right, investors might consider more reliable and productive upfront financing for renewable energy, climate smart agriculture, transport infrastructure, ecotourism etc. For lasting impact, it would be important to encourage sustainable livelihoods.

Africa believes it is "net positive." It emits less than 4 percent of world emissions, has a large population and has important carbon sinks on and offshore. (Africa's carbon sequestration contribution of oceans and coastal areas with mangroves and sea grass, as well as climate change impact on fish stocks and distribution, are not mentioned as often as they should be). However deserving the case, will Africa be "rewarded"? Perhaps full consensus will be difficult to achieve, as was the case when consensus on Africa's "special needs and circumstances" fell short at COP26. But the international audience can expect the arguments to be strongly made.

And, hopefully, African civil society will be allowed to raise its voice fully at Sharm El-Sheikh. It makes for better policy if Governments are robustly held to account.

CAN COP27 BE A GAME CHANGER? YES, BUT...

Africa will be determined to maximize the opportunities. The continent will hope international and developed nation partners, institutions and private sector will step up. Not all expectations will be achieved. But climate change is a global reality and should be above geopolitical division. Ideally engagement by Europe, the U.S., China, India and many other nations should energetically support the African continent down its "climate resilient development" road. Ambitions of African states can be greatly advanced by putting in place genuinely encouraging domestic contexts for external investment and confidence.

But, above all, Africa needs to just "do it" from within, whatever the rest of the world does. There is no time for delay.

(THE OPINIONS EXPRESSED ARE THOSE OF THE AUTHOR ALONE)

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by Sanoussi Bilal, Hanne Knaepen and Alfonso Medinilla (ECDPM)

THE ONGOING GLOBAL CHALLENGES FURTHER UNDERLINE THE IMPORTANCE OF STRENGTHENING AFRICAN RESILIENCE USING AFRICA'S OWN INITIATIVES AND DYNAMICS TO PURSUE A CLIMATE- AND NATURE-FRIENDLY TRANSFORMATION BASED ON THE IMPERATIVES OF JUST AND EQUITABLE SOCIAL DEVELOPMENT OR AFRICA STRUCTURAL economic transformation through sustainable productive capacity development is imperative for inclusive growth, job creation and prosperity. Africa is part of a troubled world, one marked by the challenges of climate change, divergent recovery and increasing inequality due to the lingering COVID-19 crisis. Add global inflationary pressures, the shock of the Russian war against Ukraine, global effects on food security, energy access and transition, increased commodity prices, and rising geopolitical tensions, and Africa's transformative development ambitions are at risk. These global challenges further emphasize the importance of enhancing the resilience of Africa, a response based on Africa's own initiatives and dynamics, one that enables a climate- and nature-friendly transformation centered on just and equitable social and human development imperatives.

While the need for increased resilience and strategic autonomy finds positive echoes in Africa's structural transformation agenda, the narrative around climate change and green transition is contentious in Africa, sometimes perceived as an agenda pushed by advanced economies that would impede the industrial transformation and job creation needs of Africa. It must be noted that the climate crisis is caused by the industrialization process and activities of rich countries and increasingly emerging economies, while Africa is only a very marginal contributor to climate change.

Africa's major concerns are the pursuit of an active structural transformation for growth, job creation and prosperity, this accomplished in a manner that is socially inclusive and sustainable, one that respects our nature and does not add to climate change. But Africa must also enhance resilience in its adaptation to climate change so that it does not affect prospects for prosperity. The international climate narrative should therefore not only focus on the climate mitigation ambitions, prevalent among advanced economies, but also include the needs and opportunities for a green and climate-resilient economic transformation and industrialization process in Africa.

In this respect, three dimensions deserve particular attention for a sustainable economic transformation of Africa: (1) the challenges and opportunities of green energy access and transition, (2) the need for greater emphasis on climate adaptation and resilience, in particular, to capture the potentially transformative benefits from sustainable agriculture and food systems and (3) the imperative mobilization of development finance at scale.

COMBINING ACCESS TO ENERGY WITH THE GREEN TRANSITION

In many African countries energy is a development emergency, one of the major bottlenecks to economic development, job creation and industrialisation. The pace of electrification and capacity expansion in many African countries continues to fall behind population growth. In sub-Saharan Africa, the number of people without access to electricity increased for the first time since 2013, amounting to 77 percent of the population in 2020 compared to 74 percent prior to the COVID-19 crisis. This is a tragedy, but it tends to overemphasize theoretical demand for electricity and frames the need for scaling African energy systems first and foremost in terms of household consumption: "600M [people] without access to electricity; growing to over 1 billion in a matter of years." Such focus has been reflected in the attention on traditional on-grid, and more recently on decentralized electrification programs and campaigns. Electrifying African economies is expensive and cannot be



unserved communities. Scaling African energy systems needs to go hand-in-hand with ambitious support for productive use of electricity, considering both on-grid and utility-scale systems, as well as decentralised mini-grid solutions. In doing so, the focus should be on leveraging Africa's clean energy potential and innovative local solutions to rapidly power the continent's sustainable economic transformation and position African economies as key players in a global green economy. Based on current technologies, the renewable energy potential of Africa is estimated to be a thousand times higher than its projected electricity needs by 2040. The clean energy sector offers signifdone by focusing only on basic infrastructure and connecting icant opportunities for scaling up decent jobs. Today, less than

The Ewaso Ng'ro delta, the third longest river in Kenya. The name of the river comes from the language of the local community and means



The large leaves of the plants Alocasia Brisbanensis are used by children as umbrellas when it rains in Boffa in Guinea.

"river of water brown or muddy."



Assomada fruit and vegetable market, Santiago Island, Cape Verde. By 2050, African agriculture will have to produce 50 percent more to meet the needs of the growing population.

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3 percent of the world's renewables jobs are in Africa, yet estimates show that renewable energy job creation can far outweigh the loss of employment in traditional biomass/fossil fuel sectors. Distributed energy systems can also create new opportunities and jumpstart productivity in previously disenfranchised areas.

Africa also holds significant reserves of critical raw materials essential for the global green transition. Countries such as Egypt, Morocco, Namibia and South Africa are seen as key future producers of green hydrogen and Power-to-X (PtX) products. The real challenge is to look beyond African extraction and production for European use in its green energy transition building resilience. These remain the priorities for African

and ensure that investments in both raw materials and PtX are rooted in a structural approach to green transition in African countries, prioritizing technology transfer, domestic processing of minerals, and the use of green energy such as hydrogen and other PtX applications to power African low-carbon industrialization and clean transport.

CLIMATE ADAPTATION IS AFRICA'S PRIORITY

Notwithstanding the current global policy attention to green energy, there is no long-term structural economic transformation possible in Africa without adapting to climate impacts and countries and the recently released AU Climate Change and Resilient Development Strategy and Action Plan's (2022-2032) overall objective is "building the resilience of African communities, ecosystems and economies, and supporting regional adaptation."

Adaptation and resilience-building are of particular concern in the agricultural sector, because of Africa's enormously high dependence on rain-fed agriculture, and natural resource-based sectors broadly. More than 6 percent of Africa's population are smallholder farmers, representing more than 20 percent of the continent's GDP. By 2050 African agriculture needs to produce 50 percent more food to meet the needs of the continent's growing population. The latest advancements in technology, research and digital innovation could allow for leapfrogging towards a climate-smart and green transformation in the agricultural sector. In Africa, there is enormous potential to further expand agro-processing value chains at domestic, regional and international levels. However, this type of agricultural expansion should happen in a climate-sensitive way and not to the detriment of ecological, economic and social growth. For example, the olive sector is of key importance to Tunisia's economic growth and olive oil is the country's largest agricultural export product, with 90 percent of production being destined for export. However, Tunisia's decades-long agricultural and economic policies have turned landscapes across the country into ecological deserts, making the country now very vulnerable to climate and economic shocks. At the same time, with large rural areas being dedicated to production of export crops, the country remains highly food import-dependent, exposing it to international food price shocks as is now the case with the crisis in Ukraine, a country from which Tunisia imports the bulk of its cereals.

Structural climate-smart economic transformation in one of the most important sectors of Africa will require the capacity to both produce and export and a reliable investment climate for the countries' own agricultural sectors. But for this, governance principles are needed that consider the local context and sustainability principles. Governments in African countries need to develop a package of trade, public investments, regulatory reforms and institutional changes that can mainstream climate adaptation and resilience-building throughout. Together with the private sector they should assist in developing agri-food systems that allow for higher production and more food self-sufficiency, for instance by giving farmers access to loans, credit and seeds, while reducing the forementioned factors that currently make agri-food systems in Africa extremely vulnerable.

MOBILIZING DEVELOPMENT FINANCE AT SCALE

The international community has so far failed to achieve the decade-old USD 100 billion per year commitment for climate require significant investment, which may be undertaken to a



action in developing countries, due to be reached in 2020. This annual goal may not be met before 2023, according to recent Organization for Economic Co-Operation and Development (OECD) estimates. This is far from covering the needs from Africa alone. Africa's needs for a sustainable energy transition, climate adaptation and resilience, and for nature and biodiversity protection will amount annually to about USD 250 billion by 2025 and USD 400 billion by 2030, while the African Group of Negotiators on Climate Change asked for USD 1.3 trillion of climate finance per year by 2025.

Capitalizing on the sustainable energy potential of Africa will

large extent by the private sector, provided the regulatory framework and policy environment is sufficiently conducive. Public accompanying measures, including by the financial development institutions, will also be needed, to help mitigate risks, support innovative and sustainable solutions and help build local capacities and eco-systems.

But attention should not be limited to climate mitigation and energy transition alone. Only about a quarter of the current climate finance for developing countries goes to adaptation and resilience, although it is the major challenge for Africa. The UN Environment Programme (UNEP) Adaptation Gap Report 2021 estimates that a 10-fold increase of global finance for on the geopolitics of the global green transition and renewable energy.

adaptation would be required to meet current needs from climate change. Yet the discussions during the last COP26 again showed that beyond the rhetoric and international commitments, increasing efforts for supporting climate adaptation and resilience remains an elusive ambition.

A concerted effort is therefore needed to improve not only overall climate finance, but also attention to climate adaptation and resilience, as well as biodiversity and nature protection. This can be done at the level of nationally determined contributions, but it should also become a priority for financial institutions for development, which may effectively catalyze public and private finance. This is particularly the case for European financial institutions for development, which have too long neglected climate adaptation and have accounted for only about 10 percent of the climate finance for developing countries by the European Investment Bank, the EU's Climate Bank. The focus should be on innovative and scaling solutions for a green and resilient recovery and transformation of Africa. This calls for

- 1. pooling resources through investment platforms, combining public, private, institutional and philanthropist financiers and actors;
- 2. integrating the development of transformative pipelines of projects with policy reforms and local ecosystem, institutional and capacity building;
- 3. catalysing more public and private finance for climate adaptation and nature protection;
- combining better climate mitigation and adaptation efforts, building on the synergies between the two, in particular in the green energy transition and agro-food systems, two essential pillars of the African sustainable structural transformation.

The UN Climate Change Conference 2022 (UNFCCC COP27), due to take place this November in Sharm El-Sheikh, Egypt, is an opportunity to adjust the global narrative and emphasize the need to finance at scale in a climate-resilient and sustainable structural transformation of Africa and other developing countries in the international climate agenda.

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THEGREEN RECOVERY by John Asafu-Adjaye

LAUNCHED IN 2021 BY THE AFRICAN UNION. GRAP REQUIRES STRONG COORDINATION AT ALL LEVELS OF GOVERNMENT, THE CONSTRUCTION OF EFFECTIVE PARTNERSHIPS WITH PUBLIC AND PRIVATE INVESTORS AND THE ALIGNMENT OF NATIONAL RECOVERY STRATEGIES



IKE MOST other regions around the world, Africa has taken together with accompanying policy measures worsened the a heavy hit from the COVID-19 pandemic on top of its preexisting challenges. Pre-COVID, African economies were already beginning to show signs of an economic slowdown. For in 2021. example, average GDP growth from 2015 to 2019 ranged from a low of 1.2 percent for Nigeria to a high of 8.9 percent for Ethiopia. Poverty in the region was still high in this period with the poverty headcount ratio at USD 1.90 per day ranging from 27.3 percent (Gambia) to 85.8 percent (Democratic Republic of the Congo). Overall, Africa's growth has not been broad-based or inclusive and has not created enough productive jobs for the growing workforce. The COVID-19 pandemic the 17 Sustainable Development Goals (SDGs) adopted by

employment challenges. The World Bank projected that the pandemic could push 34 million Africans into extreme poverty

To enable Africa to build back better from the effects of the COVID-19 pandemic and at the same time address climate change, the African Union (AU) in July 2021 launched a new continental Green Recovery Action Plan (GRAP) for the period 2021–2027. The overall goal of GRAP is to contribute towards meeting the targets contained in the AU's Agenda 2063 and to support Africa's getting back on track to achieve the United Nations in 2015. This brief provides an overview of GRAP and discusses critical issues that need to be addressed to achieve a sustainable, green and inclusive economic recovery on the continent.

KEY ELEMENTS OF THE GREEN RECOVERY ACTION PLAN

The GRAP has two broad objectives: strengthen collaboration on a broad range of priorities in support of the AU's objective for the continent's sustainable and green recovery from COVID-19 and support a shared vision for a prosperous, secure, inclusive, and innovative future for Africa

The GRAP builds on existing plans of the principal actors in the region such as the AU, regional economic communities and development partners. The plan is based on three important principles—collaboration, inclusion and relevance and sustainability.

Collaboration requires that actors at the state, regional and continental levels work together to prioritize resource mobilization and mainstream green recovery principles in planning, development and investment strategies. It also involves increasing the visibility of African stakeholders in international forums. Inclusion addresses gender inequalities as part of the process of building resilience and speaks to climate and environmental challenges. Women, youth, people with disabilities and other marginalized groups must be engaged in initiatives at national, regional and continental levels. Relevance and sustainability not only address the provision of short-term relief in critical areas such as job creation but are also concerned with long-term sustainability and contributions to Africa's growth potential.

The implementation of GRAP focuses on five priority areas: climate finance, renewable energy, biodiversity and naturebased solutions, climate resilient agriculture and green and resilient cities.

On climate finance, GRAP seeks to increase the flow, efficiency and impact of finance in reducing emissions through mitigation and vulnerability through adaptation. This will be done by:

- Improving accessibility and efficiency of financial flows for both mitigation and adaptation
- Transforming countries' Nationally Determined Contributions (NDCs) into a pipeline of bankable projects which have the potential to attract necessary investments.
- Aligning with the U.N.'s Financing for Development scheme, and
- Considering the need for a just transition by encouraging countries to ensure that their plans and borrowing support activities that are clean, resilient, and inclusive.

In the area of renewable energy, GRAP focuses on energy efficiency, access and support for a just transition. Specifically, it seeks to: enhance initiatives aimed at combatting habitat degradation; provide support for just energy transitions in AU member states; secure investments for grid expansion, transmission, distribution and efficiency improvements, while supporting the roll out of mini-grids and off-grid initiatives to support equitable energy access and transition. The GRAP also aims to address gaps in technical expertise and technology transfer; enhance work on clean cooking technologies and initiatives to improve their uptake; support countries' development and implementation of new and updated NDCs and other environment-related plans.

In the areas of biodiversity and nature-based solutions, GRAP

will target solutions such as enhancing and supporting initiatives aimed at combating habitat degradation, supporting the development and management of parks and other protected areas, enhancing collaboration to address drivers of environmental challenges such as deforestation and developing and improving mechanisms to support biodiversity, climate resilience, and the blue economy.

To support climate resilient agriculture on the continent and develop green jobs, measures to be implemented include: strengthening land governance and land markets through land tenure regularization and building land administration systems; scaling up financing for climate change adaptation in agriculture; investing in green industrialization of the agricultural sector, in line with opportunities in the Africa Continental Free Trade Agreement; leveraging technologies such as clean energy for agriculture, climate services and satellite imagery; engaging in investments or policy commitments to strengthen climate resilient and sustainable agriculture.

Finally, for Green and Resilient Cities, GRAP will focus on water management and enhancing Information and Communication Technology (ICT). Specifically, it will promote the Africa Water Vision for 2025 and the implementation of the commitments to equitable and sustainable use of water for socioeconomic development; make progress on the challenges of water and sanitation infrastructure financing for increased water access; and develop climate risk narratives that outline climate and socioeconomic predictions for countries/regions to aid engagement with policy makers. The GRAP will implement urban risk management through accelerated implementation of the Africa Programme of Action (PoA) for the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 and provide support for progress on climate resilient infrastructural development.

WHAT WILL IT TAKE FOR GRAP TO SUCCEED?

The GRAP can be seen as an ambitious plan to kickstart African economies following the COVID-19 pandemic and to address climate risk. Successful implementation of the plan will depend on four key factors. First, there should be a detailed analysis of the resources required to implement the plan over the five-year period and where they will come from. Without such analysis, the plan risks becoming just an aspiration and not a concrete plan of action. Second, successful implementation will require strong partnerships and collaboration with public and private investors. This calls for engaging all relevant investors at the outset to get their buy-in. Third, a successful outcome will depend crucially on strong coordination at all levels of government and on regular monitoring and evaluation to ensure that targets are being met. Fourth, individual country recovery strategies need to be aligned with GRAP. A recent analysis of the country strategies for Ghana, Nigeria, South



Africa and Mozambique showed that they were least aligned for renewable energy, climate finance, biodiversity and nature-based solutions in that order. The lack of alignment of the country recovery strategies with GRAP is mainly due to a lack of clarity about how specific stimulus measures may be operationalized in practice. Perhaps some countries need technical assistance to develop their strategies and implement related activities.

THE NEED FOR TIMELY IMPLEMENTATION

The GRAP aligns with the AU's aspirations of a prosperous Africa based on inclusive growth and sustainable development

A young African businesswoman frames a building with her fingers in downtown Nairobi, Kenya. With the Green Recovery Action Plan, in terms of energy, Africa aims to promote renewable energies, energy efficiency, energy access and support towards a just transition.



Etosha National Park, Namibia. The Green Recovery Action Plan (GRAP) aims to support initiatives to combat habitat deterioration, support the development and management of parks and other protected areas and the development and improvement of biodiversity support mechanisms.

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especially driven by its women and youth. It is also in line with are particularly acute and severe and that these impacts will inthe AU's Agenda 2063 goals of building environmentally sustainable and resilient climate communities that manage their natural endowments, ecosystem and environment in ways that ensure a just transition into a low-carbon pathway. Furthermore, the attainment of these goals feed directly into the broader Agenda 2063 goal of a high standard of living and well-being for all. The implementation of GRAP is timely given the devastating effects of the COVID-19 pandemic and increasing climate risk. The latest IPCC Sixth Assessment Report (AR6), Climate Change 2022, underscores the fact that the impacts of climate-related events on food security and livelihoods in Africa

tensify in the coming decades. A successful outcome for the plan hinges on strong coordination at all levels of government, building effective partnerships with public and private investors, and aligning the country recovery strategies with the plan.

JOHN ASAFU-ADJAYE

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DIÉBÉDO FRANCIS KÉRÉ Born in 1965 in Burkina Faso, he is the son of the chief of the village of Gando. He moved to the capital Ouagadougou at the age of 7 to attend school. He won a scholarship from the Carl Duisberg Gesellschaft for an internship in Germany. He continued his education at the Technische Universität in Berlin. In 1998, he founded the "Schulbausteine für Gando" (School Bricks for Gando) association for the development of his country. In 2004, he graduated with a thesis on a primary school, which he managed to build the same vear in his village. thanks to the funds raised. In 2005, he founded Kéré Architecture, with a permanent team in Berlin and another in Burkina Faso, and designed numerous public works, schools and medical facilities, but also pavilions for international exhibitions.

"ARCHITECTURE IS PRIMARILY A SERVICE TO HUMANITY": THESE WORDS SUMMARIZE THE VISION OF THE WINNER OF THE PRITZKER ARCHITECTURE PRIZE 2022. HE WAS CHOSEN BY THE JURY FOR HIS ABILITY TO FIND "BRILLIANT, INSPIRING AND GAME-CHANGING WAYS" TO SOLVE CONTEMPORARY ARCHITECTURAL ISSUES. "KÉRÉ CONTRIBUTES TO THE DEBATE BY INCORPORATING LOCAL, NATIONAL, REGIONAL AND GLOBAL DIMENSIONS IN A VERY PERSONAL BALANCE OF GRASS ROOTS EXPERIENCE, ACADEMIC QUALITY, LOW TECH, HIGH TECH, AND TRULY SOPHISTICATED MULTICULTURALISM." HIS WORK CHANGES THE NO LONGER SUSTAINABLE PATTERNS OF PRODUCTION AND CONSUMPTION. OPERATING ALL OVER THE WORLD, HIS PROJECTS DISSEMINATE THE KEY PRINCIPLES OF HIS ARCHITECTURAL LANGUAGE, SUCH AS THE SCULPTURAL USE OF NATURAL LIGHT, THE SYMBOLIC ELEMENTS, THE REFERENCE TO HIS ROOTS.

SERPENTINE PAVILION

London, 2017 - The Pavilion, housed in Kensington Gardens, was created by drawing inspiration from the vegetation of the architect's hometown. The great overhanging roof canopy is made of steel with wooden shading elements, and the structure has a transparent skin that allows natural light to enter and, at night, transforms it into an illuminated lantern. After the success of the exhibition, Kéré's Serpentine Pavillion 2017 was purchased by the Ilham Gallery in Kuala Lumpur and relocated permanently to Malaysia.







XYLEM

Fishtail, Montana, 2019 - The gathering pavilion for the Tippet Rise Art Center stands in a clearing surrounded by aspen trees and was designed as a peaceful retreat for visitors to the ranch, who can meditate or gather there for conversation, contemplating the branches swaying in the wind along the shore of Grove Creek. The sustainable pine wood used for the construction comes from a natural pruning process that saves the forests from parasitic bugs.



RENDERING COURTESY OF KÉRÉ ARCHITECTURE

BENIN NATIONAL ASSEMBLY

Porto-Novo, Benin, 2021 (construction scheduled for completion in 2023) - The new Parliament building is impressive and is inspired by the large palaver tree, used for generations by West African communities as a place for holding public meetings and making community decisions.

"This project gives shape to our ideas about community gathering, the importance of indigenous forms of governance and what contemporary African architecture can be."







GANDO PRIMARY SCHOOL

Gando, Burkina Faso, 2001 - This project established the foundations of Kéré's ideology: to build with and for a community, to satisfy an essential need and redeem social inequalities. To build it, Kéré raised funds internationally, creating opportunities for his fellow citizens and contributing to local vocational training. The success of this project expanded the school from 120 to 700 pupils and resulted in the need to create housing for teachers (2004), an extension of the school (2008) and a library (2019).

97

LYCÉE SCHORGE SECONDARY SCHOOL

Koudougou, Burkina Faso, 2016 - The school consists of nine modules arranged radiallyaround a courtyard, protecting the central space from wind and dust. A series of steps creates an amphitheater, which accommodates informal gatherings, assemblies and celebrations for the school and wider community. The walls are built out of laterite stone, a material of striking deep red color, capable of absorbing the strong daytime heat, radiating it at night. A secondary façade, made of eucalyptus wood, creates shaded spaces where students can gather to wait for lessons. The wind towers located at the back of each classroom allow the hot air to escape, helping to lower the interior temperature. Quarterly Year 12 - N. 52 April 2022 Authorization from the Court of Rome no. 19/2008 dated 21/01/2008

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