BROOKINGS | FORESIGHT AFRICA PODCAST

The Brookings Institution
Africa Growth Initiative

Foresight Africa Podcast

"Africa's global opportunity in rare earth elements"
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Episode Summary:

Gracelin Baskaran, a World Bank consultant and Bye-Fellow at Cambridge, discusses Africa's rich natural resources, especially rare earth elements, and offers recommendations for how Africa's nations can leverage these assets for the benefit of the continent. She also addresses South Africa's economy and how climate change affects economic growth and debt.

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ORDU: I'm Aloysius Uche Ordu, director of the Africa Growth Initiative at the Brookings Institution, and this is Foresight Africa podcast.

Since 2011, the Africa Growth Initiative at Brookings has published a high profile report on the key events and trends likely to shape affairs in Africa in the year ahead. Entitled "Foresight Africa," the goal of the publication is to bring attention to these burning issues and to support policy actions to address them.

This is season two of the Foresight Africa podcast in which I engage with the report authors, as well as policymakers, industry leaders, Africa's youths, and other key figures. . Learn more on our website, Brookings dot edu slash Foresight Africa Podcast.

My guest today is Gracelin Baskaran. Gracelin is a Bye-Fellow in Economics at the University of Cambridge in the United Kingdom. She is also a consultant at the World Bank office in Johannesburg, South Africa. Gracelin wrote a brilliant piece for us in *Foresight Africa 2023*, and that piece was titled "Managing the Compounding Debt and Climate Crisis." Gracelin, a warm welcome to the show.

BASKARAN: Thank you so much for having me, Aloysius.

ORDU: Let's start first by you briefly telling our listeners your upbringing in the U.S.

BASKARAN: My life is a story of the power of education and opportunity. My grandparents never had the opportunity to complete a primary school education and worked as field laborers in a rice paddy field in south India. They had six kids and often struggled to put food on the table.

My dad was the third of six kids, and as a kid he would earn ten cents a day carrying heavy scrap metal on his back for long distances barefoot. But he became the first in his family to attend university, and he went on to earn a Ph.D. in physics in India.

He immigrated in the mid-1980s to the U.S. for a post-doc in Alaska. That's quite a weather change. Like many immigrants, making ends meet wasn't easy. They moved to Texas in the late 1980s when racism was particularly rife.

I was the first in my family to be born in the U.S., and when I was seven, we moved to an auto manufacturing town outside of Detroit. We didn't have much growing up. We couldn't afford to participate in the big school trips, go to Disney, or have the nice holidays, or brand name clothes. As kids, my mom would take us to McDonald's every Friday and let us play in the play place. And as far as I was concerned, it was as exciting as Disney World.

But my parents did instill a very deep sense of lifelong learning in us, which is something I'm incredibly grateful for. We watched the news every night. We spent a lot of time at the local library and we had good magazines on the coffee table.

But more than anything, I suppose from the start of my life to where I am now, I saw the transformative power of education. As a kid, I spent time in the village where my grandparents worked and lived until they passed away. I saw my parents work incredibly hard, live frugally, and make a life for themselves.

And my siblings and I took that one step further. My sister went to MIT and Columbia and is a managing director on Wall Street. I went on to earn a Ph.D. at the University of Cambridge on a full scholarship, and my brother is a software engineer at a startup. So, I suppose in a way we found the American dream. I don't know if it exists every day, but it existed for us.

ORDU: That's a fascinating journey, Gracelin. The story of what makes this country, the United States of America, what it is and the opportunity and, of course, the tenacity of immigrants to make the most of the opportunities they have in the United States. Thank you very much for sharing that. So, as you just mentioned, then, you went to Cambridge University in the U.K. for both your master's degree and your Ph.D. in development economics. What motivated you to go to the U.K. for graduate studies, Gracelin?

BASKARAN: Yeah, that's a great question. So, after I finished undergrad, I received a Fulbright Fellowship from the U.S. State Department, which took me to South Africa. And it was a very profound shaping moment in my own education and career. It was during my time as a Fulbright scholar that I became interested in the role of commodities in economic growth because I was living in the platinum belt at a time when commodity prices were collapsing after a huge boom.

When it came to pursuing graduate school, there were really two factors that took me to the UK and specifically Cambridge. First, I love doing research, but I'm particularly interested in the nexus between research and policy. Ph.D. programs in the UK are 3 to 4 years, as you know. And for me it was important to do my Ph.D. in a space where I could be active in that policy-focused capacity. So, within the first three years of my Ph.D., given that that you don't have that two year course component like the U.S., I was able to delve straight into that research-focused policy with work for the UK Foreign Commonwealth Office, produced an expert report for the first ever ASEAN Development Outlook, and I got to join the World Bank, where I've now spent four years working on over a half a dozen countries.

So, it was perfect for me because I had that opportunity to do the journal articles, but also the policy paper and the technical assistance.

I think the second part of that is that Cambridge is a hub of expertise on African economic policy, which was my primary interest. They have professors who specialize in African research in departments such as economics, political science, geography. They also have a Cambridge Africa program. So, it was a natural draw for me, and I admit I was very lucky, I only applied to one master's and one Ph.D. and they both happened to work out. So, that was something I don't take for granted.

ORDU: Thank you very much. That's great. Cambridge is indeed a hub, as you put it, on development, just like Oxford as well, Sussex, LSE. And that is great that you had the opportunity that you had. So, then you moved to Cape Town University where you worked as a senior research fellow in the School of Economics. What was that experience like?

BASKARAN: UCT as you know is a hub for policy-relevant research in the country, in the continent. And so, I tell you, it was a really wonderful experience being in that. And I think the biggest benefit of that was that it is an institution that policymakers call to ask the hard questions, but it is also an institution that has the capacity to to do the research.

So, if I may, there there's an interesting piece of work that came up during COVID that I can share with you. So but first, I guess, some context for listeners. South Africa is the most unequal country in the world, but it also had one of the strictest COVID-19 lockdowns. To put this into perspective, for the first six weeks, I couldn't even walk outside to go for a walk or go for a run. And then after the first month-and-a-half, we could only go for that walk from 5 to 8 a.m., within three miles. And it was months before we were allowed to travel to another province or travel in or out of the country.

And for those of us in the knowledge economy, like you and I, we were fairly well protected. I don't know about you, but I've never been busier than I was during the pandemic. The World Bank was providing an enormous amount of technical assistance. But for most of South Africa, the little work there was dried up. And even before the pandemic, we had unemployment over 25%. That only increased over time.

So, early on in the pandemic, the South African government expanded its social grants system. There was a top up of existing grants, but importantly, they rolled out a special COVID grant amounting to 350 rand a month. For context, that's about $20, which doesn't even give me a third of a tank of gas in my little Honda Civic.

But during this time, South Africa was aggressively pursuing fiscal consolidation. At the start of the pandemic, Moody's had downgraded South Africa to junk status, which left the country without an investment grade rating for the first time since democracy. And, National Treasury had two pressing needs: fiscal consolidation, but needing to support vulnerability. And the beauty of the University of Cape Town, the School of Economics and Professor Haroon Bhorat, who you work quite closely with as a nonres fellow, this is a place that the government calls when they have that research question and need policy advice.

So, Professor Bhorat got this call from National Treasury to do an assessment of this COVID grant. How much was it costing the fiscus? How much would an extension cost? Was the grant effective? And in response to this, I had the opportunity to coauthor a highly relevant policy paper addressing these questions. We found in the first five months between May and September 2020, the grant reached 4 million people, but it only cost 0.13% of total fiscal expenditure. And if that grant was extended to a total period of nine months, it would still just cost 0.5% of expenditures. So, we concluded that the grant was necessary and affordable and Treasury decided to extend that grant.

You may recall that in the viewpoint we wrote for the "Foresight 2021" report, we argued that South Africa needed to improve the efficacy of expenditure to remove wasteful spending. And this grant, we decided based on this research, was a good expenditure. It was pro-poor and it kept some food on the table. So, I suppose to conclude on that, the time at Cape Town was rich to the extent that it really drove that research-informed policy.

ORDU: This sounds very much, Gracelin, that that grant had the classic value for money in terms of public policy. So, I'm glad that the beneficiaries got to receive a large part of the grant funding rather than going into administration.

So, you've lived in South Africa for nearly seven years now and worked in nine countries, nine countries in that region. In your view, what is the biggest economic challenge facing South Africa right now?

BASKARAN: Think South Africa, but I think the continent most broadly, I'd say climate change. I think climate change is such a cross-cutting challenge that cuts across all of the other development challenges. So, if we think about it, it affects the most vulnerable. So, it increases inequality. It triggers that food insecurity. Responding to climate change triggers, you know, higher debt levels. It can deter investment, right, in areas that are particularly highly exposed to climate change. So, it's this cross-cutting dimension and very few parts of South Africa are really spared to the consequences of climate change and really the whole continent.

ORDU: And in addition to climate change, what would you say was the second most important economic challenge facing the continent?

BASKARAN: I think limited fiscal capacity. Debt has been a growing challenge on the continent. I mean, now we see that two-thirds of sub-Saharan Africa is is pretty much at high risk of debt distress or already in debt distress. The challenge with debt is when you have high levels of it, it is difficult to access more money to finance core development objectives. So, what we see is happening is when countries don't have the fiscal capacity to meet these needs, you actually end up eroding decades of development gains. So, you actually lose the benefits of a lot of the money that you took out the debt to finance initially. So, it can become quite a vicious cycle. And we're seeing the pervasive nature of debt challenges across the continent.

ORDU: On that specific subject, external debt, you wrote an excellent essay for us in *Foresight 2023*, which, as I mentioned earlier, was titled "Managing the Compounding Debt and Climate Crises in Africa." In it, you talked about three primary channels through which climate change adversely affects public finance and therefore driving up debt. Could you explain what those channels are, please?

BASKARAN: Yes, of course. So, when we think of climate change on the continent, we don't really think of it as being mitigation because outside of South Africa, countries are not grappling as much with mitigation as they are adaptation. So, when we say the climate crisis, we're really talking about those floods, those droughts, those cyclones, these shocks, for lack of a better word.

So, the first channel is probably the first one that we think about when we think of climate shocks, which is the increased spending and borrowing required to respond. So, this is going to include your expenditures to rebuild property and infrastructure, to provide social protection to households given disruptions to jobs, loss of income, to address food scarcity, as well as other recovery and reconstruction costs.

So, a great example of this would be Cyclone Idai in Mozambique, which is one of the worst cyclones that's ever hit the southern hemisphere. It generated $2.9 billion in recovery and reconstruction cost. And we know that in developing countries,

assets are much more likely to be uninsured or underinsured. So, the IMF stepped in and gave Mozambique, which we already knew had a very large debt burden, a $118 million interest free loan. But that was a drop in the bucket of the full scope of needs. And importantly, Mozambique's debt to GDP ratio by that point had crossed 100%. So, that's the first avenue is really saying, you know, countries have to spend more.
So, the second dimension is it slows economic growth and it reduces government revenue. So, this is going to be due to multitude of reasons, right? So, slowed economic growth can result from supply chain disruptions, from damage to transport and energy infrastructure, such as roads or ports or electricity grids. Disruptions to key economic sectors, particularly agriculture, gets wiped out in these in these events. But tourism, manufacturing, they also take it. And then also stranded assets. The loss of revenue from these different dimensions cripples governments because they're also having to spend more to address these challenges.

And then the third channel, which really the viewpoint seeks to get to the core of, is that when you have a high exposure to climate risk, this also leads to a repricing of sovereign assets. So, it reduces a country's creditworthiness. And when creditworthiness goes down, borrowing costs go up because countries are perceived to be a larger risk. And a great example here is Fitch, a ratings agency, in 2020, they said, look, water risks are going to become a more prominent driver in sovereign ratings over the medium- to long-term against the backdrop of climate change, because we know that it affects countries' public finance. And they specifically noted that African countries are especially exposed to these flood risks. And noted, for example, Benin, Rwanda, and Mozambique.

But we've already seen that this isn't even just forward looking, because when we looked at the downgrades in the last three years in Namibia and Zambia, droughts and floods have been explicitly mentioned as hindrances to public finance and macroeconomic stability. But as we see the rise in frequency and severity and climate shocks, we're going to see them play a much more prominent role in downgrades, which will increase borrowing costs.

So, ultimately, if countries have high climate risk, high borrowing costs, high debt, all of which are interrelated, it makes it harder to make progress in advancing any economic goals because they won't have the fiscal capacity to finance them.

ORDU: From the perspective of the finance minister, I'm just thinking, so what do we do now? We're faced with all these challenges from Africa's policymakers' point of view. What will your recommendations be to address these challenges, Gracelin?

BASKARAN: This is actually a question we get a lot, because it is a kind of a crippling challenge in that unlike the pandemic which passed climate change is here to stay. And the biggest thing from a finance ministry's point of view is how do we increase our financial resilience? How do we turn to expensive borrowing less?

And I think the answer there is adopting financial instruments that can make responding cheaper and quicker. So, one such avenue that we often use are contingency funds, and they need to be earmarked for climate change because often what we see is that contingency funds are often tapped into for bailing out state owned enterprises, for public sector wage increases. But it needs to be earmarked that you’re setting this money aside within your budget every year, and it can only be leveraged for climate shocks.

A second instrument, for example, is sovereign insurance. So, the idea of sovereign insurance is that when these smaller shocks happen, you know, you’re once in two year, once in five year event, then you finance it through the budget or through borrowing. But when you have that big one in 20 year event, the ones that cost a lot, the insurance will pay out for that. Other instruments include catastrophe bond, contingent lines of credit. So, that would be the first bucket, are these financial instruments.

The second one is improving the efficiency of your existing expenditures, which we talked about earlier. Right? So, how do I take the money I’m spending and use it to reduce future recovery and reconstruction costs? And the most obvious thing here would be investing in climate resilient infrastructure.

Here in South Africa, you know, we have the port of Durban, which is the busiest port and the largest port on the continent. And they have been hit with floods, severe floods in 2017, 2019, and 2022. The latest ones were the worst floods South Africa has ever experienced. And we have watched the same infrastructure collapse over and over again. So, instead of building it, poorly constructed infrastructure, using expenditure to build it right would be the second key recommendation.

And the third recommendation I think made in the viewpoint is monitoring liability. So, if a shock happened, what do I need to pay for? For example, additional social security spending would be an example, right? What are my infrastructure liabilities if a shock happened? So, that would be the responsibility of policymakers. And there’s other responsibilities that would fall to multilateral development banks.

ORDU: Indeed, spending development funds wisely remains one of the biggest challenges, irrespective of which country we’re talking about. So, you also recently wrote a piece for us which we published on our platform, *Africa in Focus*, titled, “Could Africa replace China as the world’s source of rare earth elements?” In your view, could Africa really replace China as the world’s source of rare earth minerals, Gracelin?

BASKARAN: This is an incredibly timely question. And to unpack the answer to listeners, let’s consider why rare earth elements are important and why Africa has this window of opportunity and what they must do to tap into it. Because it’s not just about ability, but it’s what do we need for that to happen? So, first we why are rare earths important to us? So, rare earths are critical for human and national security. So, we see them in electronics. They’re in your phones, they’re in your computers. They’re important for renewable energy technology—our wind turbines, our solar panels. But they’re also critical for national defense. So, we’re talking about jet engines, missile guidance and anti-missile defense systems, GPS equipment.

And in 2021, the demand for these reached 125,000 metric tons. Nine years later, we’re expecting to see that rise to 315,000 tons.

So, the question is, why does Africa need to replace China? Is that China has a stronghold on the market for rare earths. The country only has a third of the world’s reserves, but it accounts for 60% of production because it’s mining other countries’ rare earths deposit. And then it has 85% of the world's capacity to process, which means rare earths from other countries and even other countries who own it are then being sent to China.

But as tensions between China and Taiwan escalate, we're having a lot of concern that there could be a global disruption to these elements via an embargo on countries supporting Taiwan. We saw Arab OPEC countries do this with oil to countries that supported Israel in the 1970s. So, it's an old tool out of the economic diplomacy playbook.

But here is where Africa has an opportunity. Africa has incredibly rich endowments of minerals and metals. I know this isn't news to you, and it's not news to most listeners. To understand the continent's significance of key supply chains, we can actually look at other commodities. So, we see that Africa has over half of the world's cobalt and copper, it exports over 75% of the world's chromium ore and manganese. And these are all minerals and metals that are in high demand, particularly for some of these clean energy supply chains.

But likewise, significant deposits of high-grade rare-earth elements have been identified in countries such as Malawi, Namibia, Angola, South Africa. And that's just the tip of the iceberg when you consider how little exploration has been done on the continent.

ORDU: On that, you talked about how little exploration is being done on the continent. Could you elaborate a bit more on what you mean? Because relative to the vast untapped potential that you alluded to.

BASKARAN: There are five stages to a mine. Our first stage is exploration and prospecting. Stage two is mine design and planning. Three, we construct our mine. Four we finally get to produce. And five is mine closure.

Exploration is the very first step and Africa has low levels of exploration. In 2017, African countries' total number of active mineral exploration sites was sitting at about 280. That's half of the number of sites in Canada and Australia, despite having over triple the surface area. In 2021, Africa had the second lowest levels of exploration expenditures in the world. Without exploration, you're never going to make it to production. So, the point of this is to say that we found these incredibly rich high-grade deposits of rare earths and given such a small share of exploration, if we scaled up exploration, I'm very confident that we would actually be able to rapidly ramp up production. And countries would want to buy from Africa to reduce that exposure to the supply chains from China.

ORDU: As you talk about the exploration, Gracelin, my mind goes to a country like The Democratic Republic of the Congo and of course, Zambia, next door to you over there in South Africa. I was just wondering, a recent MOU, memorandum of understanding, was signed between Congo DRC and the Zambian government to basically make sure that they minimize export of raw material and actually add value at home first before exporting these produce. Care to comment on that?

BASKARAN: That's brilliant. We've talked about this before, but President Hichilema in Zambia, you can tell he's a private sector oriented thinker and a businessman. Because here's the reason is it's very difficult in a single country to produce an entire value chain. But if you combine countries and you form that partnership, you can combine the capital, the technical know-how, the capacity to actually build that value chain.

So, what you're doing is you're leveraging both countries to reach better outcomes for both sides rather than exporting it and letting the value addition go somewhere else. And that really is, if we even think on a larger scale to something like the regional economic communities or the African Continental Free Trade areas, they're all built on the idea of what the DRC and Zambia are already doing, which is if we come together, we can do better.

ORDU: So, what should African governments do to maximize the benefits from rare earth minerals, in your view?

BASKARAN: So, to preface my thoughts on this, I would say that the guidance for maximizing benefits from rare earths elements extends to all minerals and metals. So, first, countries need to strengthen and stabilize their tax policy. You want to maximize tax revenue while still ensuring that firms are being compensated for that risk. We talked about how, you know, the five stages of the life of a mine and country spend a lot on exploration, and much of it is inherently unsuccessful because they're just looking. But at the same time, stable tax policy is incredibly important or it can be a deterrent to investors. In Zambia, we saw that repeated royalty and tax increases over a ten-year period leading up to 2019 had a big hand to play in the exodus of investors.

So, second, we need to move away from resource nationalism to a continental approach. African countries have historically used primary commodity export bans to support domestic economic development goals and beneficiation. But given the capital and capacity constraints, it's very hard to build that entire value chain in a single country, which is why we see that partnership between Zambia and DRC to be so critically important.

And I think finally, as Janet Yellen has just gone to Zambia, it's a very strategic time to actually talk about how African governments can build these value chains and join her "friend shoring" idea, which for listeners who aren't familiar, she's really pushed for building supply chain networks with allies and friends to reduce that risk of disruption. So, the hope is that, now that she's had this visit and really starts to understand the macro fiscal dynamics of these countries, that there's an additional incentive to bring African countries into these global value chains going forward.

So, all to say if the continent can extract, process, and manufacture and then sell to its allies and friends, then job creation and revenue generation will be off the charts.

ORDU: So, as an American, Gracelin, who has spent so much time working on economic policy in Africa, do you have any thoughts about the future of U.S.-Africa relations?

BASKARAN: So, strengthening economic diplomacy between the U.S. and Africa is a critical priority, broadly speaking. So, I'm biased, like you said, I'm American, but I believe that Africa needs to join Janet Yellen's friend shoring game.

But I think there's another critical area to me, which is AGOA, the African Growth and Opportunity Act, which we know is coming up for renewal. This has been such an important economic diplomacy tool and it's up for renewal in a couple of years. We often think of AGOA as being the instrument for job creation and private sector development, and it absolutely is. But it's also a valuable tool to reduce reliance on external debt and donors. So, think of it this way. In 2021, approximately $4.8 billion of non-oil goods were exported to the U.S. through AGOA, which is up from 3.8 billion in 2019. But that's $4.8 billion of goods that African countries can tax producing firms for. And that revenue is critical for financing socioeconomic objectives in light of tightening fiscal capacity. So, there's one point.

I think the second thing we need to think deeper is how to incentivize bringing U.S. investment to Africa. At present, many of the firms who benefit from AGOA are Chinese, particularly in the manufacturing sector. I know because I've spent time and engaged with the Chinese textile and apparel firms in Lesotho and Eswatini who are both AGOA recipients, and I visited the Hawassa industrial park in Ethiopia where more Mandarin is being spoken than English. So, American investment is critical to strengthening those economic ties, especially amidst economic challenges and capital constraints.

So, I think building above this trade preference program that has been absolutely transformative for countries, particularly the smaller ones, it's actually starting to bring in more investment. And that investment can actually help countries where there are capital constraints with building, you know, the clean energy processing and manufacturing capacity, because that is very capital intensive. So, it enables the U.S. to have this more strategic relationship. And African countries stand to benefit enormously from the capital and capacity there.

ORDU: You mention this stop in Zambia reminds me of the sense, at least many of us share, that rating agencies could do a better job in terms of assessment of Africa's sovereign risks. Any thoughts on that?

BASKARAN: Absolutely. So, we see the consequences of downgrades very tangibly on the continent. I saw even in South Africa, right, when Moody's downgraded the country in 2020, I mean, the currency depreciation was massive, which had a huge impact on countries who were importing, were importing from the U.S.

What we see is that there's just not a lot of consistency with credit rating agencies. You know, when you actually read the explanation, for example, of downgrades, there's valid points in there, but there's not a streamlined methodology given the heterogeneity of countries on the continent. Right? For example, you look at a country like Zambia who has very rich copper reserves, but when commodity prices started coming down, obviously it put pressure on public finance. But that's not necessarily a strategic point for a downgrade. Right? Because you downgrade them and then the capacity for them to lend in light of lower commodity prices becomes even harder.

So, I'd say that there's not a streamlined way, in my opinion, that credit rating methodology is applied, and it certainly doesn't capture the improvements in public finance. You know, we've talked about this recently. There's a lot more downgrades than upgrades for lack of a better word. And countries are making a lot of progress. I mean, you do see countries really working to pull in their debt situation. You do see countries, working to rein in their inflation and making strategic development gains and building more credible financial sectors. But these aren't necessarily being captured in rating agencies' ratings.

ORDU: As we wrap up Gracelin, looking back, what are your biggest takeaways from your life journey thus far?

BASKARAN: Hmm. I'd say the first thing is a road less traveled is incredibly valuable. I was a kid who grew up in an auto manufacturing town who never really traveled even within the U.S. And after my Fulbright, I set off with a backpack and explored southern and Eastern Africa, East Asia, parts of the Pacific. And now as what I call, you know, being a grown up, I sit in capital cities with ministries of finance, wearing the suit, talking about high level economic policy interventions.

But the greatest lessons I learned about how economies work was when I traveled with a backpack. I learned about the challenges associated with foreign investment and land grabbing in a taxi in northern Ethiopia when a farmer who had land that was later purchased by Heineken. You know, Heineken had paid the government, but the government had never paid the farmer. So, he came home one day to find that his all of the land owned by farmers in there was gone. But Heineken had paid for the land. And that's in the north of Ethiopia, where now has been absolutely ravaged by conflict.

I learned more about models of rural development while driving a motorbike through Vietnam. And I, you know, I really started to understand the about the less spoken effects of dollarization while standing at a food stand in Bulawayo, Zimbabwe. And to this day, when I get I get street credibility with my Zimbabwean counterparts when they find out I backpacked to Bulawayo when I was 22.

But you learn about development challenges and in a less sanitized, more authentic way sometimes than when you're looking at numbers. And I suppose when I yeah, when I look back, those were some of my most formative moments.

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ORDU: Gracelin, thank you very, very much for making the time to join our podcast today. Have a wonderful day.

BASKARAN: Thanks for having me.

ORDU: I'm Aloysius Uche Ordu, and this has been Foresight Africa. To learn more about what you just heard today, you can find this episode online at Brookings dot edu slash Foresight Africa podcast. The Foresight Africa podcast is brought to you by the Brookings Podcast Network. Send your feedback and questions Podcasts at Brookings dot edu.

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