Finance for resilience podcast, brought to you by The Climate and Development Knowledge Network_Ep 4 _What are green bonds and how do we encourage growth in developing markets?_Transcript

[00:00:00] **Kamlesh Pillay:** Welcome to the Finance for resilience podcast, brought to you by The Climate and Development Knowledge Network, or CDKN. If you're curious about how financial solutions for climate change are developed, you're in the right place. Listen in as we discuss, debate and look at real life, practical ways to finance changes that can be made for significant and lasting economic and environmental impact around the globe.

[00:00:28] Hi everyone, and thanks for joining me, your host Kamlesh Pillay. I work as the climate finance lead at CDKN at South-SouthNorth, an organisation focused on enabling climate resilience. Among the many challenges facing emerging and developing economies, climate change is one that looms larger than ever. Even though green projects and investments are on the increase, a challenge is often the scale of finance that is being issued for such projects. This is especially true for bigger projects on a government or country scale, for example big solar panel plants or a desalination project.

Green bonds are one reliable pathway to help developing and emerging economies raise capital for their green projects, helping them make climate-smart investments. But what exactly is a green bond? In simple terms, a green bond is a regular bond that is specifically issued to raise capital for climate change solutions and projects with environmental benefits. In addition, they provide transparency and disclosure on the management of the proceeds. The main goal is basically for the proceeds to go to green assets and to help unlock the investment potential of green infrastructure, technologies and services.

So structurally, green bonds are the same as regular bonds, offering comparable risk and reward profiles and following the same issuance procedures, but the proceeds are used for climate and other environmental projects ranging from renewable energy and energy efficiency to sustainable agriculture, green buildings, water, waste and much more. Green bonds also typically come with tax incentives, which makes them more attractive to investors.

[00:02:20] The first green bond was issued in 2007 by the World Bank, but the market only really started to have lift-off in 2014. Since then, each year has closed at record highs. Even though the market has seen exponential growth that is, an average annual growth rate of approximately 95%. it is still relatively small compared to the traditional bond market, accounting for a mere 1 %.

[00:02:48] The benefits of green bonds are both tangible and measurable to investors and the greater public. Some experience it on a daily commute on a newly built mass transit system; others reap the benefits of lower energy bills thanks to renewable energy solutions. still others enjoy the rewards of employment as a result of work generated from building new green and sustainable infrastructure. All of these can be financed through green bonds.

In December, 2020, the green bond market reached an impressive milestone of 1 trillion US dollars in cumulative issuance. Since the first green bond was issued in 2007. The City of Cape Town issued South Africa's first adaptation focus, green bond in 2017 during the drought, when the city's dams reached alarmingly low levels. The proceeds of the issuance was used to fund and refinance green projects in the city, including its emergency water supply schemes designed to address the severe drought.

The city was able to raise it's 76 million US dollar issuance from eight allocated bidders since then, and even amidst the COVID-19 pandemic.

[00:04:05] The appetite for these specific investment vehicles is growing as investors look for climate friendly projects to invest. Jean Pierre Lacombe Director of Global Macro Economics at the

International Finance Corporation has noted that momentum for green and sustainable investment in emerging markets is building. That's great new to us as green finance is moving from niche to mainstream.

In today's episode, we'll hear from industry experts as we unpack the green bond market, as well as how developing countries could potentially benefit from these climate finance instruments.

Just a note on some terminology you may hear - greenwashing refers to the use of green capital for non-green purposes, for example a green bond used to finance a coal fired power station. An acronym or two you may hear are EBRD which is the European Bank for Reconstruction and Development and SEBI refers to the Securities and Exchange Board of India.

So let's start with some introductions. Megan, can you tell us a bit about yourself and your organization?

[00:05:16] **Megan Sager:** My name is Megan Sager. I'm a Director at Sustainable Solutions. We also sustainable finance specialists, which work to unlock capital to create more sustainable cities in Africa and beyond.

[00:05:28] **Sandeep Bhattacharya :** I am Sandeep Bhattacharya. I work for the Climate Bonds Initiative and I'm based in Mumbai. The work of my organization is to mobilize capital at scheme for climate solutions, which include mitigation and adaptation. And I work towards my organization's mission in India.

[00:05:49] **Robert Bunyi:** My name is Robert Bunyi. I am the Managing Director of the Kenya Pooled Water Fund. And what we do is we look to raise capital through issuing bonds and on the Nairobi Securities Exchange specifically for the water sector.

[00:06:07] **Kamlesh Pillay:** Great. Thank you so much, Robert. And thank you all for joining.

[00:06:11] I think I'll just start off with a very broad question to kick us off and Megan I'll come to you first, just about the role of green bonds and why they're important and will be important in the future to raising capital for climate and green initiatives. If you can give us an intro about why they're so useful.

[00:06:30] **Megan Sager:** Absolutely. So historically green projects have primarily been financed through niche unlisted impact funds. These structures have been really important for catalyzing new opportunities and helping bring them to commercial maturity, but they cannot provide the rapid scaling required to transform entire sectors.

[00:06:50] So for this instead, large pools of institutional capital are required. Institutional investors lack the greater liquidity, transparency and diversity [00:07:00] found in capital markets. So it's easy to understand how more than a trillion dollars have been raised by green bond markets in just over a decade.

[00:07:08] Although the developing world still receives only a minority share of this cash at about $50 billion per annum. This is still a sizeable amount to catalyze the transition to low carbon climate resilient economies.

[00:07:23] **Kamlesh Pillay:** Robert and Sandeep, maybe we can ask you the question from a regional perspective. Robert, maybe I'll start with you just to elaborate on the growth of green bonds specifically in Kenya and some of the regulatory context that has seen the growth of green bonds or potential growth for green bonds in the future

[00:07:44] **Robert Bunyi:** In Kenya, the, the need for green bonds is quite a large, in my view, it's still a niche product. Uh, for the financial system and the regulatory adjustments that have been made in the country relate to the [00:08:00] admissibility of such, uh, initiatives for the general investment by the population, by the investor base. Now, what has happened is the biggest concern amongst the Kenyan authorities has been, if an entity was to raise money under green bond label. Would the proceeds be actually utilized for a green project? And, so the regulations that came through ensure that there was a clear ring fencing to identify the project and its capital requirements, and to ensure them that the funds actually went into that project. The other initiatives then the National Treasury here has taken is to popularize the concept of a green bond, issuances, uh, development of green bond projects for financing and encouraging financial sector players to allocate capital into this new stream of investments that are coming through. The government showed that the lead domestically in issuing a bond, a green bond last year, and that now set the stage and we've got a number of especially public entities that are looking to put together green bonds for the market.

[00:09:19] **Kamlesh Pillay:** Sandeep maybe you can speak to this from an India perspective, just the regulatory context, but also the growth of the marketing in recent years.

[00:09:27] **Sandeep Bhattacharya :** So the Indian market started in 2015. And since then it has been a bit of a jagged story up and down 2017. So issuances of $3 billion and this calendar year has still now is coming close to $10 billion, which is as per expectations.

[00:09:48] Uh, so what has caused this? The market developed very early in 2017, due to government related issuers, uh, which is often seen as a policy decision to have a few issuances, which then created the understanding among the players. Then they convinced the whole lot. And this calendar year hasn't seen too many government related issuances.

[00:10:16] It has seen mostly private sector. So the market has absorbed the understanding of what it is all, and this year has seen many what is known as the daughters of the green bond sustainability linked, sustainability bond and the rest, quite a social bond. So it has seen use of proceeds bonds with various other flavors as well. In terms of regulations SEBI came out with the green bond guideline in 2017, which kind of gave the market a feeling that yes, the regulator knows and is making something though the regulation doesn't necessarily cover most of the issuances because they are offshore. Most of the green bond issuances are off shore attracted by the dedicated green capital in offshore markets, which not, not on you, you can prove it by, by the numbers, but most issuers will say that it, it deserves an ease of issuance and lower costs because is that additional demand and supply issue.

[00:11:19] **Kamlesh Pillay:** Thank you so much, Sandeep, I'd like to jump back to Megan in your initial statements you've mentioned that the developing country or emerging market issuances still lag behind. And I think for our listeners, one of the useful starting point is often diagnosing the problem.

[00:11:37] So maybe I can ask you just some of the barriers or issues that you've seen in the market that deter investment in these economies. And then some of the issues that you've seen to kind of remediate the issues as well.

[00:11:54] **Megan Sager:** So in emerging markets, specifically as Sandeep has indicated, there's often less demand for green financial instruments like green bonds.

[00:12:05] This means that institutional investors are less familiar with sustainable investing, approaches and instruments, making it difficult for issuers of green bonds to find subscribers to these products. The investors are also deterred by additional due diligence required for an unfamiliar instrument, which raised their transaction costs.

[00:12:28] So foreign investors with impact aligned mandates have been really important in catalyzing green bond markets in larger emerging markets like India and China. So these issuers are likely to have multinational activity or regional activity, which is dollarized or based in another hard currency and this in turn enables them to tap foreign markets for green bonds.

[00:12:55] By contrast, most other emerging market issuers are earning revenues in local currencies, which, uh, presents an obstacle for them to raise foreign capital in hard currency. So this has been a particular challenge. And then of course, just more broadly the market capacity to engage with more sophisticated financial instruments has been a little bit more limited within the public sphere, but also within the ecosystem required to support green bond issuance.

[00:13:28] So the consultants, verifiers and other institutions that are part of the green bond issuance process. So what we see is that only a handful of emerging markets have passed $5 billion in cumulative issuance to date. Some of the most creative solutions have involved partnering with multilateral development banks.

[00:13:51] So institutions like the International Finance Corporation or IFC have played a really important role, both in building institutional arrangements within emerging markets to enable new new markets to develop. But then also de-risking these markets. So that may be three taking a leading role. For example, becoming a debut issuer of green bonds in an emerging markets, or it may involve supporting green bond issuance by another issuer, either as an anchor investor or the provider of a credit guarantee or some other measure that makes risk adjusted return more attractive to the local institutional investors.

[00:14:35] **Kamlesh Pillay:** Yeah, I think Megan, you, you made some really valuable points. I think one of the things that I pick up from your statements is really this delicate balancing act between regulation that creates a market that avoids greenwashing and regulation that adds a burden onto, uh, issuers that deters them from green bonds.

[00:14:57] Maybe my question for you, Robert is just in the context of this increased regulatory need, uh, to avoid green washing. Has this been one of the reasons why issuances have been a bit slow er in Kenya and maybe you can elaborate on some other barriers that you've experienced in the East African context.

[00:15:18] **Robert Bunyi:** Number one, our market here in Kenya is more a frontier market than a, true emerging market. So it therefore reflects a slight under development of the overall economy and the market itself. Now, when you put that into context, the challenge that we find in our region is that the project development process is a bit laboured out here. It's laboured, because on the first instance, their potential issuer may be capital constraint in terms of just finding the resources to develop a project prior to financing.

[00:15:58] The second issue that comes out is that awareness levels are low. There is in Kenya, a body called the Kenya Green Bonds

Program, which is supported by the government of Kenya and pushes the agenda of green bonds. And this is now raising their awareness amongst corporate executives and public sector executives on, uh, green bonds. And this is helping the situation. I would therefore say. That if anything in our region, the regulators have been the leading lights on this agenda while the market has been following.

[00:16:37] **Kamlesh Pillay:** Thanks. Um, Robert, um, I think maybe I'll just take a step back. How do we know that what we're financing actually does deliver outcomes? I think it's, um, I think a touchy issue, because I think as, um, financiers, we believe that what we are financing does you know, ultimately deliver climate compatible development, but how can we be sure is maybe the question so Megan, if you can touch on how we report on what we actually deliver in terms of real impact.

[00:17:13] **Megan Sager:** So that is in fact, a very interesting question Kamleshan, and it goes to the heart of some of the most important disagreements about what green bonds should be delivering. So if we look at the International Capital Markets Association, green bond principles, which are more or less universally applied sets of principles on what constitutes a green bond.

There isn't in fact, a narrowing of that focus to climate compatible development. So the focus more broadly is on financing, environmentally, sustainable projects and activities. So provided a project or activity has clear environmental impact benefits, it can be considered for inclusion in a green bond. What happens then is that the country developing the green bond markets needs to determine which projects and activities fit within that scope.

[00:18:12] And this is the importance of a local market taxonomy. So while the climate bond standard, which Sandeep works with provides very clear international guidance on what could qualify very often countries take a more locally specific approach, which cater for specific conditions and limitations. So this is, this can be an important enabler of helping issuers identify qualifying green projects and activities within this scope. Once the, the sets of projects and activities has been identified for green bond issuance purposes, reporting becomes really important as does the way that proceeds of the green bond issuance be managed. So as a [00:19:00] use of proceeds bond type green bonds require issuers to separately account for all of the proceeds raised through the green bond program and ensure that these proceeds are applied only to eligible green bond projects and activities. So this speaks to the integrity with which that issuer applies, the proceeds managers them, and make sure that the projects and activities deliver on the commitments made in the green bond framework.

[00:19:32] After issuance, the issuer is then required to undertake, reporting on both the financial application of proceeds and the impacts associated with the projects and activities. At the moment that reporting requirements is not. Uh, it's not uniformly applied or standardized. And the same thing with the external review of the green bond framework, which provides us with comfort that the green bond projects and activities do indeed meet with uh, what is generally accepted as being environmentally beneficial. So these are two very important dimensions for the market to focus on going forward, both the treatment of external review and the requirements for impact reporting to build confidence in the green bond market. And enable issuers to more sustainably count on demand for these instrument types.

[00:20:27] Particularly as net zero carbon commitments grow and investors look to incorporate ESG compatible instruments in their portfolios and for the listeners not familiar with that acronym. ESG stands for Environmental Social and Governance factors, which are relevant to the long-term performance of investments.

[00:20:47] **Kamlesh Pillay:** Thanks, Megan. I think, you know, we've, we've obviously talked a lot about the issues and the barriers, especially in developing and emerging markets, but on this podcast series, we try and be more proactive and try and [00:21:00] figure out the solutions that are going to tackle some of these issues. So just a question for Sandeep regarding policy incentives.

[00:21:07] So obviously the role of the public sector is quite crucial. And what kind of policy incentives have been implemented maybe by Indian regulators and whether you see a need for it to grow the green bond market in India.

[00:21:21] **Sandeep Bhattacharya :** Generally, even globally, there hasn't been a lot of policy incentives for investing. What has generally driven the, the markets are awareness and this to take the case of say France, where awareness levels are very high. It was because there were a lot of disclosure requirements. Uh, so instead of policy incentives, what has happened is if there are disclosure requirements, which create the awareness.

[00:21:53] So if large companies are supposed to disclose what is the climate risk. Uh, then, you know, with so much of disclosures, the market is impelled to find solutions to it. And therefore, uh, people say that, oh, I don't want my money to be invested in, in, in, in the places where there's climate risk or let's invest in things which lessen the climate risk. So that is what generally drives the market, uh, or has driven the markets till now, rather than incentives . Um, so that's been the case by and large.

[00:22:32] **Kamlesh Pillay:** You know, we've spoken about the role of the regulator, the role of the public sector, but often these kinds of solutions, especially in developing and emerging markets require multi-stakeholder solutions.

[00:22:45] Robert the Kenyan Water Pooled Fund I know it's quite a unique fund. If I can ask you just to elaborate on the organization and maybe just a context in which green bonds are envisioned to be used to grow the fund.

[00:23:01] **Robert Bunyi:** A little bit of context first. Kenyan Pooled Water Fund, uh, targets, water utilities in the country for funding, we are an enabler or transaction advisor for these water companies in a very unique way. First, what are utilities in Kenya are generally very small and their projects are also very small and would not have achieved the economies of scale to. pay for the issuance costs themselves. So what we do is we pull a number of, uh, utility projects together, such that the entire basket is of sufficient scale to be able to justify the costs of a listing on the bond market here in Kenya.

[00:23:49] Number two is that we assist the water companies in developing their projects, putting them together, getting all the necessary approvals. Uh, those would include from the water authority here in the country, from the environmental authorities, also in the country. And eventually once, once all that is done, the projects themselves are then verified independently as to their green status.

[00:24:18] And on achieving green status, we would then pull them together with other projects and those would then be issued in the market. So that is the way we operate. Typical sizes of the projects that we are looking at individual projects are somewhere between a $1.5 million and $5 million at this point in time.

[00:24:39] The interesting thing is that for this specific utilities and then 98 of them in the country in various towns across the country. The interesting thing is that the entire sector has gone through two decades of reform and those reforms have been centered around making those operations more corporate like.

[00:25:00] What does that mean? That means that the revenues of water utilities remained within the water utilities, the tariffs that are water utilities, charge, uh, consumers, but reflect the costs of delivering water services and sanitation services, and therefore create the bedrock upon which a commercial financing environment can thrive that that is critical. So the additional layer that is coming, if you think about it, most water projects will naturally end up being green projects. And I'll give you an example of, uh, climate impact onto what our utilities here in the country. Uh, one utility it's water source has not been protected in the sense that the rivers, uh, and the land around the rivers has been extensively, deforested and farmed on.

[00:25:55] And these results in a lot of siltation in the rain season. So when it rains, a lot of silt flows into the treatment works and the plant cannot produce water. So it's a very interesting situation is that that town does not have water when it rains. Well at a round, the same location another utility years ago, went out to engage the farmers upstream and encourage them to plant trees.

[00:26:23] And that planting of trees today protects the rivers that they are able to produce water. When, when it rains, these are the kinds of projects that we are encouraging the water utilities to get into, in addition to sanitation type of projects.

[00:26:40] **Kamlesh Pillay:** I think that that helps a lot your mentioning of water is very key because I think prior to this, we've mostly been speaking about mitigation projects and I think it's positive to see that the Kenyan Pooled Water Fund obviously focuses on water and sustainable water issues.

[00:26:57] Megan, maybe on that note, I can ask about how we can kind of create better drive and investor interest in, uh, adaptation specifically. Is there a possibility of having preferential price reductions for adaptation focused bonds? If I can ask whether that has a place or whether we just have to wait for adaptation to become a greater issue and drive interest in, in that manner?

[00:27:26] **Megan Sager:** That is a very interesting question. One. I'm not sure I can fully answer right now, but let me take a stab at it. So, indeed for a project to be suitable or portfolio of projects to be suitable for green bond issuance. It's important that they are commercially viable for application to, uh, to, to fundraising by a bond.

[00:27:51] So bond relies upon predictable and stable cash flows at scale to enable marketability of these instruments to institutional investors. So, what does that mean? It means that the underlying projects need to generate cash flows, which meet that profile with a high degree of predictability. So one of the measures that has been really successful in catalyzing green bond markets in emerging markets is developing a project preparation facility. Which provides some visibility on the kinds of projects or portfolios of projects, which would be suitable for green bond financing purposes.

The focus to date has mainly led within the mitigation space with three sectors, being energy, transport and buildings featuring particularly prominently in this debate. In the adaptation space the question is to what extent we can package these projects in a similar manner. So can we establish the same degree of predictability, the same strength of off-taker or sponsor to provide the necessary reassurance to investors that they will be repaid on time and that there will be no default. And I think a lot of attention is being focused on creating more commercially viable models within the underserved portions of the adaptation space.

[00:29:19] So water is probably more advanced than agriculture forestry and other land use projects. Which is where attention is being focused now with the help of emerging markets for carbon credits based on carbon sequestration projects, and other environmental commodities, which can be generated by nature based solutions.

[00:29:41] So we've probably are a few years away from being able to unlock significant additional potential for the segments, but there are receiving priority focus for green bond fundraising and other fundraising mechanism.

[00:29:56] **Kamlesh Pillay:** So it's not all dire it's, uh, there is very [00:30:00] much, um, solutions to these issues. Sandeep, I think, given your position with the Climate Bond Initiative. I think one thing that our listeners would be very interested to hear about is just some the examples of, of green bond issuances that you've experienced that maybe focus on adaptation.

[00:30:20] **Sandeep Bhattacharya :** Yeah. Adaptation actually has been a bit of a laggard. Quite a few reasons. Uh, it's, it's much easier to quantify greenhouse gas emissions. Adaptations, are much more difficult to quantify.

[00:30:37] Uh, so that has been one part. We are on a project where we are trying to get adaptation bonds out. And if the project is focused on agriculture and, uh, you should be seeing some action soon. So, what we did was to overcome all these, uh, hassles. What we did was we [00:31:00] first came up with what is known as the Climate Resilience Principles, which, uh, gives, uh, you know, some, some guidance about what a resilience investment should look like for investors.

[00:31:13] And then went about talking to financial institutions, the relatively small ones. And some off-takers of agricultural produce, uh, you know, some people in the cotton value chain, some people in, uh, some of the paper value chain, you know, they grow trees or use other materials. There are also players in the sugar value chain who are ensuring that the produce that they use is from sugarcane, uses much less sugar than what is generally the case.

[00:31:50] The only bond, which is adaptation till now has been EDRD. Uh, that's the only one which happened in 2019. Uh, it is taking some time and, um, there have been attempts. Some of them, you don't have come to the conclusion that adaptation should be a public good. It cannot be privately financed because of some of the difficulties involved. Projects can be very bespoke. And because they are bespoke, they might be very difficult to replicate and scale up. So these are some of the issues, but I think on a project that we are currently working on, we have overcome quite a few of them. And you should see some coming out quite soon.

[00:32:36] **Kamlesh Pillay:** Yes Sandeep I think we're all quite excited now to see what comes out of CBI next. Um, Robert, do you want to add anything from an adaptation perspective.

[00:32:47] **Robert Bunyi:** From an adaptation perspective? No, not really, but let me just comment on something Megan mentioned earlier with regards to awareness. And this was following your question on pricing. If there's a pricing advantage you can get on the bonds.

[00:33:02] I think the way to think about a pricing is to more focus awareness. And I'll give you one example for water, in Kenya, the highest cause of death in the country is diarrhea. Anything to do with upset stomach and it's such a high level. And what do you need to do at a national level is to come to grips with a problem and manage your sanitation a lot better because of all the pollution that's going into our water and to our ground surface and groundwater.

[00:33:41] So my perspective from where I sit here in the country is that if we focus on the costs, the true costs to the entire nation, that if you don't do these projects, the costs on the health side are much higher cost. The lower, uh, employment incomes that people will earn and the disruptions to business, these are huge economy-wide expenses that would have to be born without these investments.

[00:34:13] And then people start to understand where the risks are. The true risks are in their investments. And then the pressure will then come to the corporates, the public sector. To make the right investments, particularly those that are growing green.

[00:34:27] **Kamlesh Pillay:** Great. Thanks for that, Robert. I mean, I think it's, it's something that definitely comes through quite strongly in the adaptation context, actually about the need to kind of create awareness about the avoided losses in damages, for example, in the future.

[00:34:43] And I think if we make that case a bit more strongly, then there is a case that can be made to investors and issuers to, to act in the market. Especially if the, you know, obviously the pricing is, um, is appropriate and the possibility for the returns is present.

We're coming to the end of our time together and maybe if I can ask just for one recommendation from each of you. About what can be done to grow the market into the future, and whether there is any kind of specific measure that can be taken on by the public sector. Megan I'll start off with you.

[00:35:22] **Megan Sager:** So to touch on a topic that we've spoken about quite a lot during this podcast, creating clarity for the market regarding applications of green bonds can be incredibly powerful and linking to this the regulatory incentives to encourage the right type of green bond to come to market. So what does that mean? That means an incentive coupled to measures that promote credibility and confidence in the green bond market, notably through external review, which includes verification, second party opinion, and certification against the climate bond standard.

[00:36:03] So creating a clear environment within which issuers and investors are able to speak a common language about which projects and instruments are suitable for financing, the transition to a low carbon climate resilient economy, and then rewarding issuers for taking, taking on some of the additional costs associated with credible green labeling. This is certainly something that we have seen working well in some Asian markets, the combination of the two of these measures so that the regulation does not become a burden, but can in fact become an enabler to the markets.

[00:36:43] **Kamlesh Pillay:** Great. Thank you, Megan. Sandeep, shall we go with maybe some advice for the Indian government or any other, uh, public sector entity about issuing.

[00:36:54] **Sandeep Bhattacharya :** Since you have given me a choice of just one, it would be greater disclosures and climate risk. [00:37:00] That in my opinion can right the rest. So if you keep Europe aside the rest of the markets, I think the biggest hurdle is lack of awareness, lack of widespread awareness, which can then drive action. So then what can drive awareness is mostly disclosures for most of the large companies. The shareholders will be up for a huge shock if they come to know what's the climate risk of most of their assets.

[00:37:25] **Kamlesh Pillay:** Sandeep, just for the benefit of our listeners who are non-experts. Can you just elaborate on climate risk disclosure and just exactly what you mean by those terms?

[00:37:36] **Sandeep Bhattacharya :** So there's a large company which has many plants by the seashore, and we all know that sea levels are rising. So if that company has to, has to make disclosures that under the 1.5 degree scenario versus the two degree scenario was the four degree scenario, what will be the danger to their plants?

[00:38:03] And you can imagine the same thing for a port. So if the water level rises to this level, certain many ports will now become dysfunctional, uh, at the current height. These are some of the disclosures, which in turn means that the banks in the country who are financing these assets will also have a lot of non-performing loans, under many climate scenarios.

[00:38:29] And these are some of the ones which we can predict. There will be some which we really can't predict. Now, if these disclosures come out. And then that raises the awareness. Oh my God, this was the company I was investing in that I had so much of stock in this company. And if the climate scenario pans out they'll have this much of raining or this much of assets with a damaged, or this one's your assets, which are unusable. [00:39:00] So, uh, that is what drives a lot of awareness that how much of danger is there that gets somewhat quantified though, most scientists would say it. It will be a lot more than what can be quantified now.

[00:39:15] **Kamlesh Pillay:** Yes, that helps immensely. I think it's definitely something investors would like to know before they allocate any of their capital towards those investment types. Uh, and lastly, Robert, maybe from a Kenyan perspective, just any recommendations that you would give to the government.

[00:39:34] **Robert Bunyi:** We need, I need to look at the policy with regards to the engineering professionals, locally. And it could be through the permitting process where climate impact of the project that is being put forward for permitting, uh, should be reviewed, should be stated. I think that's one way in this particular part of the world could bring this to the surface.

[00:40:00] **Kamlesh Pillay:** Well, that brings us to the end of this episode. Um, thank you so much for your time and energy in discussing this really important climate finance opportunity.

[00:40:14] With the release of the Intergovernmental Panel on Climate Change's 6th assessment report this year, we know that we have limited time to avoid dangerous climate change. Consequently, there is a need to magnify and scale up efforts to reduce emissions by redefining current methods of energy production, manufacturing and consumption of goods and natural resource management. This will ultimately be determined by the availability of capital with green bonds playing an integral role in meeting the global financing gap.

[00:40:46] In summary green bonds are becoming more mainstream by the year. And the growth of the green bond market in emerging economies can be further developed by increased awareness, policy incentives and climate risk disclosure.

[00:41:01] Thank you for tuning in to the Finance for resilience podcast, brought to you by The Climate and Development Knowledge Network, or CDKN. If you're interested in the future of climate change, or curious about the policies, information and solutions around climate change, join us again as we continue to explore climate and development challenges, within and across borders.

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