

Financing climate adaptation: What works, what doesn't, and can carbon credits help to bridge the gap?

November 5, 2021: The first episode of Development Dialogues offers an in-depth exploration of the intricate dynamics surrounding climate adaptation finance, the potential of carbon markets, and the pressing need for innovative solutions. [Namrata Kala](#), [Rohini Pande](#), and [Catherine Wolfram](#) join host Catherine Cheney to discuss the challenges and opportunities in climate finance, as well as the role of markets in driving transformative change. The episode is released in the run-up to [COP 29](#), the United Nations Climate Change Conference, which will take place in Baku, Azerbaijan, November 11-22, 2024. Development Dialogues, a collaboration between EGC and [VoxDev](#), facilitates direct conversations between researchers and policy actors on pressing development issues. It builds on the [VoxDevTalks](#) podcast and [Voices in Development](#), a podcast from EGC exploring issues related to sustainable development and economic justice in low- and middle-income countries.

FULL TRANSCRIPT (with timecode)

00:00:02:03 - 00:00:28:27

Rohini Pande: “So the way I think about it, I think a voluntary carbon market, we should think of it as a sandbox, a sandbox in which we want to actually understand how do we actually have a system to verify high quality credits? Because if we don't have a supply of high quality credits, our experience in compliance markets is that they're just bad news for compliance markets. I think the reason why I hope we don't give up on them is I think they're one of the few ways I know right now of international climate financing going from rich countries to low income countries.”

00:00:29:21 - 00:00:54:22

Catherine Cheney: Welcome to Development Dialogues, a podcast series bringing together experts from research and policy to answer questions that are key to addressing today's most complex global development challenges. We'll discuss how the latest research and development economics can inform strategies to fight poverty, reduce inequality, and drive inclusive economic growth. Development Dialogues is a collaboration between Yale's Economic Growth Center and VoxDev.

00:00:58:13 - 00:01:36:28

Hello and welcome to Development Dialogues. I'm your host, Catherine Cheney. In this episode, we'll discuss financing, climate adaptation, what works, what doesn't, and what role can carbon markets play. We'll also discuss the upcoming United Nations climate change summit COP 29, which is seen as a critical opportunity to scale up climate adaptation finance, particularly for countries bearing the brunt of climate impacts. Joining us are three leading experts on these issues. Catherine Wolfram is the William Barton Rogers Professor in Energy and a Professor of Applied Economics at the Massachusetts Institute of Technology Sloan School of Management.

00:01:37:00 - 00:02:13:23

Previously, she was the Deputy Assistant Secretary for Climate and Energy Economics at the US Treasury. You'll hear about some of Catherine's recent work on the impacts of the European Union's carbon border adjustment mechanism, which builds on the EU's emissions trading system by applying carbon pricing not only to domestically produced goods, but also to imports. We're also joined by Rohini Pande, the Henry J. Heinz II Professor of Economics and Director of the Economic Growth Center at Yale University. She's been exploring ways that international carbon markets, particularly voluntary carbon markets, can fund climate resilience in lower income countries.

00:02:13:25 - 00:02:47:10

Rohini says that despite their flaws, voluntary carbon markets provide a rare mechanism to direct international climate finance from wealthier to lower income countries, and she has some proposals for how they could be improved. Namrata Kala, an Associate Professor in Applied Economics at the MIT Sloan School of Management, will also bring her expertise studying how households and firms learn about and adapt to environmental change and regulation. She served as a Senior Editor for the VoxDevLit on climate adaptation, summarizing economic research on weather and adaptation to climate change in developing countries.

00:02:47:12 - 00:02:59:27

Together, Catherine, Rohini and Namrata will unpack the challenges of financing climate adaptation and low and middle income countries, and the role that voluntary and compliance carbon markets could play in bridging the climate funding gap.

00:03:02:03 - 00:03:11:06

So what are the most critical gaps in financing climate adaptation today, and how are you working to tackle this problem through your own work? Let's start with Rohini.

00:03:11:08 - 00:03:45:04

Rohini Pande: So I think the most critical challenge, of course, is that there isn't enough money. So lower income countries just don't have enough resources and the resources they have on the domestic budget, they see important needs for it when it comes to poverty alleviation and economic growth. So I think a critical challenge is identifying how do we get resources from richer countries to these countries to manage adaptation. And there I think a big constraint is the concern of how money is being spent in these countries. So you often hear concerns about, "we can send the money, but we don't know where we spend."

00:03:45:06 - 00:04:13:24

Implementation is poor, there's no credibility. And I know we're going to talk later about voluntary carbon markets, but that's one good example of how concerns of poor implementation really caused an important source of financing to dry up. So I think an important avenue for research, and certainly one I and other colleagues are engaged in, is trying to think about how do you have credible methods of showing what works in adaptation and get estimates of the benefits from doing so?

00:04:13:26 - 00:04:22:27

Catherine Cheney: And Namrata, I know this is something that you looked at in the VoxDevLit on climate adaptation. So before we dive into responses, what does the research say on the challenges?

00:04:23:01 - 00:04:58:25

Namrata Kala: The literature review was outlining the state of the literature on climate adaptation in developing countries. And so it essentially was in three parts. The first was the impacts of climate change. That's already happening and we think will continue to happen on first order economic outcomes in developing countries like GDP growth, human capital formation, per capita incomes, etc.. The second part was understanding, as much as we know, what interventions increase resilience and adaptation on what timescales and for which outcomes.

00:04:58:27 - 00:05:42:01

And the third was really laying out some of the really important questions that are not as yet answered, like how do we get more resources to these interventions? Are the highest return interventions really being funded? What are some political economy concerns when you start funding some of these interventions and so on. To your earlier question about what I see as some of the gaps. So I think Rohini already mentioned that there's not enough funds at present. I think the OECD estimates that 10% of all climate financing is going into adaptation, and the UNEP estimates that we're going to need something like 150 billion per year by 2030 to meet the adaptation needs of developing countries.

00:05:42:03 - 00:06:16:19

Not even close is what the estimates that we have right now on this are. The second thing that I will mention is that the World Bank recently highlighted that fragile and conflict affected states are getting disproportionately lower per capita adaptation funding than, say, middle income countries which have more state capacity. So I think that's yet another need. And then finally, the last thing that I'd like to highlight about these gaps is over 60% of current adaptation funding is in terms of loans, not grants. Whether this is the optimal way of funding adaptation, I think, still remains to be seen.

00:06:16:21 - 00:06:30:28

These are some of the bigger kind of research questions also as I see them, as is the role of targeting these to the best interventions, the best geographies, and then making sure that they're achieving outcomes in the longer term, which is still something we don't have enough work on.

00:06:31:00 - 00:06:39:04

Catherine Cheney: Catherine, how would you describe the challenge of financing climate adaptation? Again, not just in terms of amount, but in terms of getting it where it needs to go?

00:06:39:06 - 00:07:14:17

Catherine Wolfram: I guess I'd start at a very high level just to set the scene. And I think there are two points to keep in mind. One is just at a very basic level. The Global North got rich by burning fossil fuels and, you know, creating the problem that we're talking about. So you can say, oh, but the Global North didn't know when they were burning a lot of those fossil fuels that they were creating climate change. But

yet we are rich because we burned them. So there's definitely kind of a moral imperative to pay for that benefit that the Global North is getting.

00:07:14:19 - 00:07:48:21

I think the second point is that most of the impacts of climate change, and this is something that research has established, most of the impacts that we're currently feeling, and definitely going forward that will be felt will be in the Global South. So temperatures are going up. Temperatures are already higher in the global south. So just kind of the sensitivity to the very extreme temperatures will be higher and the ability to insulate yourself from the shocks of climate change, the extreme weather or the higher temperatures, that just gets easier the more income you have.

00:07:48:23 - 00:08:26:21

So, you know, at a personal level, if you're higher income, you can buy an air conditioner. You can buy insurance in case your crops are wiped out by climate change. So, you know, one of the key gaps is income. That's where the climate finance discussion comes in. But I think it also highlights at a higher level, like the real tension that we're facing as we address climate change, because we want to do it in a way that lets countries continue to grow and develop economically, or those goals in and of themselves, but also because the richer countries get, the better able they are to kind of weather the effects of climate change.

00:08:26:23 - 00:09:06:15

I agree completely what Namrata and Rohini have said that yeah, there is definitely a need for finance adaptation, but I think in policy circles there's been a lot of focus on the number, exactly how much money is going to finance climate change. There was this Paris commitment to get 100 billion by 2020 from the developed world to the developing world. They didn't quite meet that goal until 2022. But, you know, I've heard in policy circles a little bit of consternation over the fact that that goal gave so much focus on just the dollar figure and not what the dollars were going to be used for.

00:09:06:17 - 00:09:13:21

So I think that's an important area where research can contribute and help identify programs that work and programs that don't work as well.

00:09:13:24 - 00:09:26:27

Catherine Cheney: So one of the takeaways from the VoxDevLit on climate adaptation was that many successful adaptation policies weren't initially climate focused. But of course, raising incomes is helpful for climate adaptation. Namrata, can you elaborate on that?

00:09:26:29 - 00:10:08:14

Namrata Kala: Adaptive capacity is highly correlated with income, and that's because at a private household or firm level, it allows you to cope with a shock. And at a more infrastructure level, it might be correlated with state capacity, etc.. So I think for these reasons, when we look at what increases resilience, income stands out as one big determinant or factor that affects resilience. And indeed in the literature,

what we highlight is there are several interventions that were geared at poverty alleviation or firm growth policies, which is giving grants to small firms and finding that ex-post, they also increased resilience.

00:10:08:16 - 00:10:25:00

And I think that there's important lessons to be learned from that. I also think that moving forward, there's a pretty critical need to understand how to coordinate adaptation efforts at various levels of government, at the individual versus community level that I think we don't know enough about.

00:10:25:02 - 00:10:31:13

Catherine Cheney: Of course, you've also looked at efforts specifically geared toward climate adaptation, including innovative financial products. Can you speak to some of those?

00:10:31:15 - 00:11:06:07

Namrata Kala: Sure. So I think this is kind of an exciting space for research. What is incredibly exciting about it is its potential for big, real world impact, along with combining interesting ideas in economics. And so a recent example of this is a paper that's based out of an RCT in Bangladesh, which guarantees farmers a credit line in the event of a flooding disaster, and in so doing, it sidesteps important questions around trying to increase insurance take up in developing countries, which have stayed low and are difficult to overcome.

00:11:06:09 - 00:11:44:07

And what this financial product does is by guaranteeing a credit line in the event of a disaster. It provides this implicit insurance and so it increases ex-ante investment even in absence of a flood. And in event a disaster does occur, it provides this consumption smoothing benefit. So I think there's interesting research out there that's looking at innovative financial products. I think there's interesting research out there that is looking at new technologies, including in agriculture, that reduce downside risk in the event of natural disasters, and finding that it has these potential large resilience benefits.

00:11:44:09 - 00:12:21:20

Now, when it comes to technologies I think one thing that's worth mentioning is, and this is from someone who works at MIT, is like, technologies can be super exciting, but they really need to be field tested in the difficult conditions that they're going to be living in to make sure that the returns are real as we understand them, being used by people who are going to use them. So that's one big thing that comes out of this. And the second big thing that comes out of this is that the equity impacts of these technologies are often non-trivial and ex-ante hard to predict. And so trying to understand them and building them into the research ex-ante is going to be, I think, really important moving forward.

00:12:21:22 - 00:12:37:14

Catherine Cheney: And Rohini, I know that Economic Growth Center's inclusion economics team has done some really interesting work along these lines, including working with Google.org to increase the effectiveness of flood early warning systems at the last mile. So what are some of the learnings from that work for climate adaptation technologies?

00:12:37:16 - 00:13:18:16

Rohini Pande: I think the broader lesson I draw out of this, and I think that's something that was implicit in a lot of Namrata said, is that as economists, we think about incentives all the time. But in a lot of the discussion of, you know, how to design climate adaptation technologies, what will cause it to be taken up, we don't think enough about incentives. So as Namrata said, there's a super exciting loan product that's possible. But when you start thinking about what are the incentives of loan officers to take up this product that go beyond just doing a field experiment evaluation, that's a whole additional level of work that will need to be done to go from having one field experiment that shows great results to persuading the lending organizations to take those up.

00:13:18:18 - 00:13:30:10

And I think that's perhaps a place still where as academic economists, we don't do enough to, you know, having completed the field experiment to then understand the steps it's going to take to align incentives to take up this new technology.

00:13:30:12 - 00:13:41:28

Catherine Cheney: I want to hear a little bit more from Catherine about the transition you made from working in academia to working in policy. So can you share more about your work in low-income country contexts, and what lessons you took with you to your work in policy?

00:13:42:00 - 00:14:14:09

Catherine Wolfram: I collaborated with a colleague at UC Berkeley, Ted Miguel. And we've done a lot of work looking at the impacts of bringing electricity to rural households in Kenya. And I guess, you know, at some fundamental level, people look at the fact that high-income countries consume a lot of electricity per capita, low-income countries consume much less electricity. And a lot of policymakers think, well, we just need to bring electricity to people, and then they will become high income, right? They think there's a causal relationship.

00:14:14:11 - 00:14:50:10

And so we implemented a randomized control trial and paid to bring electricity to certain households and not others, and found what I would characterize as super depressing results that it costs a lot of money to bring electricity to the households. And the households basically did not see any economic benefit from this large investment. That was kind of the across-the-board finding there was a little bit of differentiation by households that the higher income households were able to buy appliances and kind of take advantage and use the electricity in ways that the lower income households weren't.

00:14:50:12 - 00:15:28:11

But yeah, I think it's an example of how you need to bring evidence to bear on these kind of ideas that that can take on a life of their own in policy circles, and everyone just kind of gets it in their head that, oh, we need to electrify, we need to spend more money on electrification. But I think our work highlights that it's important to think about the exact beneficiaries of a program. I guess the summary lesson that I took home is that if you've identified the people in the world who don't have electricity in their homes, you've basically identified the poorest 800 million people in the world.

00:15:28:13 - 00:15:59:05

And not only do they lack electricity, they lack lots of things, like they lack good flooring in their house or good roof, access to health care, access to education, transportation. There are lots of things they lack, and electricity production or electricity supply is just not a silver bullet. I mean, I guess in a policy realm, you see how important it is for academics to come and try to disrupt the – yeah, just ideas kind of get into people's heads.

00:15:59:07 - 00:16:07:15

And it's important to make sure that those ideas are based on firm evidence and backed up by kind of solid evidence.

00:16:07:17 - 00:16:24:12

Rohini Pande: The World Bank is making a big push right now on electrification in Africa. It sort of has defined that is going to be one of the big areas when pushing. And so I was curious about how you think of that and your sense of whether that has been informed by any of your research on this topic.

00:16:24:23 - 00:16:56:15

Catherine Wolfram: Yeah. I guess the other thing that I learned working in government is the importance of politics. My impression is that electrification is kind of hugely politically popular. I remember going to Kenya right before the 2017 election. And they're just these enormous billboards advertising the success that the government had had, electrifying homes. So I think there can be kind of a disconnection between what politicians emphasize,

00:16:56:17 - 00:17:27:24

and the politicians are the ones interacting with organizations like the World Bank, right, and if it serves their needs, they're going to request more of it. So there's, you know, a tension between what they want and what might really be beneficial for the people on the ground. That said, a former boss of mine in government, not Secretary Yellen, but somebody else said, “you never want to kind of second guess a politician's own understanding of their domestic politics. They are the expert in their domestic politics.”

00:17:27:26 - 00:17:49:14

So, you know, it would be surprising to people outside the US just how important politically gasoline prices are here. It so influences voters in a way that I think is hard for people outside the US to understand. So similarly, I think there are issues like that in other parts of the world. It's hard for us to understand the domestic politics.

00:17:49:16 - 00:18:00:03

Catherine Cheney: Building on this point on politics, I did want to ask specifically about carbon pricing. Catherine, I know this is something you've worked on. Can you talk more about its relevance to financing climate adaptation?

00:18:00:05 - 00:18:38:18

Catherine Wolfram: Going back to economic first principles, the economics of climate change are that we have an externality that when people burn fossil fuels, when people make stuff like cement and steel, they're emitting CO₂. And that causes these huge spillovers to the whole, the whole globe. So the economics of this is like super straightforward. You just want to put a price on those emissions in a way that helps individuals and firms internalize the damages that they're creating. You know, it sounds easy from an economic perspective, politically, especially in the US, that's been more challenging to implement carbon pricing.

00:18:38:20 - 00:19:19:04

I see two links between carbon pricing and the discussion on adaptation. One is that when countries implement carbon pricing, it creates fiscal revenues. So it's basically another source of government funding. And so one of the challenges with funding adaptation is literally coming up with the money. Carbon pricing is one way to help fund some of the adaptation implementations. The second way, and I guess, you know, in some ways one of the challenges I think, with adaptation finance so far has been the political difficulty around funding aid.

00:19:19:06 - 00:20:07:16

You know, it always struck me as a little bit jarring. The US found it difficult to raise 13 billion a year as its share of the 100 billion Paris commitment. And yet the US passed the Inflation Reduction Act, which is going to spend upwards of 100 billion a year domestically to reduce emissions. So I think that just is a, you know, stark example of the difficulty financing aid compared to financing domestic programs. So one way that carbon pricing can help is if you think about providing benefits to lower income countries by letting them emit carbon for a lower price, that's a kind of less transparent way of transferring a valuable resource, in this case, carbon emissions to lower income countries.

00:20:07:18 - 00:20:46:02

So the IMF put out a report in 2021 kind of sketching out what a global graduated carbon price policy could look like, where lower income countries could charge \$25 a ton, middle income countries would charge \$50 a ton, higher income countries would charge \$75 a ton. I think there are a lot of reasons to like that, but what it effectively is doing is transferring a valuable resource – carbon emissions – to lower income countries but in a way that's a lot less transparent and perhaps politically easier than literally like writing checks and sending money to lower income countries.

00:20:46:07 - 00:20:48:29

Catherine Cheney: Rohini or Namrata, did either of you want to jump in on that?

00:20:49:01 - 00:21:32:25

Rohini Pande: I think when we draw this very bright line between mitigation and think about that's where carbon pricing or reducing carbon emissions is and adaptation is with the consequences, we often end up, and I think Namrata talked a bit about this, you know, thinking about a policy like just a plain vanilla cash transfer policy, maybe being one of the best adaptation tools you could have. But if, you know, if our eye is really on trying to think about adaptation in a world where you also want to recognize a scarcity of emission space, then I think, as Catherine said, I think you want to bring in pricing to start

thinking about what are the ways of either providing financing or thinking about adaptation that possibly helps in the overall goal of, you know, limiting carbon emissions.

00:21:32:27 - 00:22:11:16

So, for instance, when we think about selling of carbon offsets, or we think about things like reforestation efforts, which are now increasingly in some ways more popular than deforestation prevention efforts. You know, those are ways also possibly, of helping people manage livelihoods when traditional farming is becoming impossible because of extreme weather. But I think that requires us to kind of break down these two separate silos we think about. And I'd say one important lesson, at least I've taken away from the work I've done in pricing in emissions trading markets is that in low state capacity settings, this is actually an important tool to improve just regulatory compliance.

00:22:11:18 - 00:22:25:15

And if that's a feature we need throughout, even with adaptation of improving implementation, I think thinking about how do you more effectively use price mechanisms is something that I think the adaptation space would benefit from thinking harder about.

00:22:25:17 - 00:22:52:27

Namrata Kala: Let me just add a little bit to that particular point, which is the other reason to do that is what we do today, as lack of mitigation or mitigation can potentially affect the dynamics of adaptation needs in the future. So, for example, if there's large-scale deforestation, you might actually be impacting the adaptive capacity of ecosystems in the long term. So that's another reason not to think about them separately because they might be linked for that reason.

00:22:52:29 - 00:23:07:00

Catherine Cheney: Rohini, I'd love to hear more about your work on voluntary carbon markets. So you've explored how a well-functioning international carbon market can substantially benefit low and lower middle income countries. Can you expand on some of that work and its relevance to this conversation?

00:23:07:03 - 00:23:49:04

Rohini Pande: I should say this is less of kind of a research project that has a clear outcome, but more of thinking through how economics can help us understand both the problems of voluntary carbon markets and provide some guidance of where we may want to make changes. So just as background, the voluntary carbon market came up in a context of thinking about how do you help either companies or countries or even individuals hit so-called net zero goals, where you want to make sure that how much you're emitting as individuals, it could be just the act of taking a flight by helping reduce emissions somewhere else.

00:23:49:06 - 00:24:24:22

And I think alongside is the recognition that some of the cheapest opportunities to reduce emissions are still in lower income countries. So these could be nature based solutions like not cutting down trees or reforestation or maintaining peatlands. For now, it's a completely voluntary private sector market with a lot of off the counter trades where project developer, someone who says that they can prevent forests from

being cut through a broker will sell these permits to, let's say, a big company like Microsoft or Delta, who will then be able to say that they have reduced emissions.

00:24:24:24 - 00:25:01:01

The problem, of course, in this market is it's very hard to verify whether the money that's being provided to the project developer was essential to prevent the activity. So in other words, you want it to be the case that the forest would have been cut down unless the money was given to the project developer. In reality, we know it's cheapest to get on board those who would not have cut the forest anyway. And this problem of what we would call adverse selection is rife in this market. And recognizing this caused the market to collapse. There's now a lot of discussion about how to revive this market.

00:25:01:03 - 00:25:42:01

The market is very small right now, but I think the interest in it is because there seems to be a large set of what we would call good buyers, which are large companies that, you know, wish to figure a way to reduce emissions. And so a lot of groups, you know, starting from the US Treasury, international groups have come up with so-called principles of what you'd like to see in the market. The whole question that these principles need to become rules, need to become ways of verification. And I think that's a place where economists, especially empirical economists who spend a lot of time thinking about counterfactuals, could actually contribute by helping think about what are the right ways of measuring whether without the money, this activity would not have happened.

00:25:42:03 - 00:25:48:03

What are the right ways of paying auditors who are going to verify these activities to prevent a conflict of interest, and so on?

00:25:48:07 - 00:26:45:12

Catherine Wolfram: I think this ties well with the previous conversation that we had about carbon pricing. So I guess I would characterize carbon pricing schemes, whether it's a carbon tax or some kind of emissions trading system as non voluntary or compliance markets. So to me the key question is the extent to which voluntary markets are like a baby step towards compliance markets. So whether they're complementary to eventually getting to a compliance market or whether they're a distraction and they let companies like Microsoft and Delta, as Rohini said, you know, claim that they're going to be net zero by 2050 and take their foot off the brake in terms of pushing for compliance markets, because, you know, in the end, well-designed compliance markets include payments for sequestration and include payments for carbon removal technologies.

00:26:45:14 - 00:27:17:00

So, you know, I guess I think that voluntary markets, some do think that they are a baby step towards compliance markets. I hope that's the case. But I really worry that they are a distraction. To paint the optimistic picture that they are baby steps, I think these questions about kind of establishing how you verify that something's been done, I think those will be important in any kind of compliance market, where you are making payments at a higher price, presumably, than is currently reflected in the voluntary markets.

00:27:17:02 - 00:27:21:19

But we will need to understand how to verify that reductions are taking place.

00:27:21:22 - 00:27:57:02

Rohini Pande: Yeah. If I could just jump in. I completely agree with Catherine. I think the future in some ways of voluntary markets is compliance markets. The examples we've had. So for instance the EU ETS, which is one of the most successful markets in its phase one, did allow for these offsets or nature based products. And then it was very poor quality that caused the price actually in the market to crash. And now EU ETS in a second phase doesn't allow it. I think the most promising examples we see are countries like South Korea that allow a very small fraction, 5% ,of the market can be from these carbon offsets.

00:27:57:04 - 00:28:36:29

And the idea is it's too small to affect the overall price. So it's not going to get tainted by bad quality offsets, but it can give a little bit of a playing space. So the way I think about it, I think the voluntary carbon markets, we should think of it as a sandbox, a sandbox in which we want to actually understand how do we actually have a system to verify high quality credits? Because if we don't have a supply of high quality credits, our experience in compliance markets is that they're just bad news for compliance markets. And at the same time, I think the reason why I hope we don't give up on them is I think they're one of the few ways I know right now of international climate financing going from rich countries to low-income countries.

00:28:37:01 - 00:28:53:13

And it's a push that's not going to be, I think, as easier politically because it's being pushed by, for instance, shareholders of companies and those I think will push companies like Amazon and Meta as the data centers become more and more hungry to show some activism on emissions reduction.

00:28:53:23 - 00:29:05:01

Catherine Cheney: I want to give Namrata a chance to jump in here. So it seems like we're getting into some debate, which is a good thing around the role that voluntary carbon markets might play in financing climate adaptation. What's your take?

00:29:05:03 - 00:29:35:19

Namrata Kala: I'm sort of in the middle of this where I think they're only useful if they're good, but I do think that it's worth trying to make them good. And I think the problems are well known. So I think the one thing that is pretty clear is that there's quite a lot of good evidence now that's highlighting the source of the problems in these markets, the lack of additionality, and so on. And there's also other like development econ work that looks at environmental markets in developing countries, which Rohini's worked on, that shows success and that is a compliance market.

00:29:35:21 - 00:29:51:04

But it makes me wonder if there's lessons there from making an emissions market work out of nothing, really, in a not super high capacity setting, whether there's principles that could be transported to voluntary carbon markets. So I'd be curious to learn about that.

00:29:51:06 - 00:30:08:01

Catherine Cheney: It sounds like there's some consensus here that despite the challenges facing voluntary carbon markets, there are reasons to invest in their improvement. With COP 29 on the horizon, many of these issues are likely to be on the agenda. So what outcomes do each of you hope to see emerge from the COP process?

00:30:08:03 - 00:30:40:18

Yeah, I must admit, a little bit of frustration with the whole COP process. If you look over the last 29 years on the technology side, we've seen tremendous progress, right? I mean, 15 years ago, no one would have predicted that solar panels would be so cheap, that energy storage would be so cheap. And yet, on the policy side, we haven't made that much progress. I think part of the issue towards getting to a breakthrough global agreement would be you would start with a smaller number of countries than are represented at the COPs.

00:30:40:20 - 00:31:11:11

So the cops definitely serve a purpose. They're broad and inclusive, give every country a voice and a seat at the negotiating table. But I think that's also one of the barriers to making further progress. I'm a big fan of the EU's and now the UK's carbon border adjustment mechanism. This is a policy that's grown up outside of the COP process, but I think is really having tremendous impact in forcing a global conversation around carbon pricing.

00:31:11:13 - 00:31:45:20

And so, you know, I'm hoping with that lighting the fire that we will see some progress towards maybe a limited agreement that's limited to the CBAM, as it's called, sectors. So right now CBAM only covers the aluminum, steel, fertilizer, cement sectors, but some kind of six country, if those are the right six countries, the US, the EU, Russia, Brazil, India, China, that would be huge. That would cover a lot of emissions and would be a great example.

00:31:45:22 - 00:32:16:17

And I think a global agreement or a six country agreement that's done right could wrap together carrots and sticks. So you could have the stick of being hit by a border adjustment if you don't adhere to the agreement, but you could also wrap in climate finance transfers, some technology sharing, kind of examples of pilot demonstration projects and countries. So hopefully we will find our way towards something that looks more like multilateral cooperation.

00:32:16:19 - 00:32:43:16

Namrata Kala: Yeah, I think binding commitments, both because they're binding and because they involve irreversible investments into infrastructure, which makes it less likely that because of an election or an oil price shock, countries just kind of pull out of agreements that they agreed to. So I think for that

reason, that's my hope. And I think, you know, Rohini and I work on crop burning, which is yet another thing which seems like people think about once a year a lot. And so my other hope is that people keep thinking about it throughout the year.

00:32:43:24 - 00:33:29:14

Rohini Pande: I completely agree with Catherine that I think, you know, getting 190 countries on board, you end up with broad agreements, as you did with something like the Loss and Damage Fund. But when it comes to the nitty gritty of how you're going to finance it, that starts falling short. And the economists in the evidence space have started thinking a lot more about, you know, costs and benefits of different policies. And so one hope for me, which I certainly don't think will happen in time for COP 29, but maybe COP 30, that as a group of economists and I think it's a broad group, you can start thinking about how to have, you know, some of the issues, for instance, that we've talked about, could be on pricing, could be on incentives, could be on other things, can start making the way to these forums, which right now I think have a lot of lawyers, have a lot of scientists, but then relatively few, I'd say, more academic economics voices.

00:33:29:19 - 00:33:41:10

Catherine Cheney: Well, I hope that conversations like this one can bring more of a focus on research informed policy to the COP process. Catherine, Namrata, Rohini, thank you all so much for taking the time.

Namrata Kala: Thank you.

Catherine Wolfram: Thanks.

Rohini Pande: Thank you.

00:33:43:25 - 00:34:10:08

Catherine Cheney: That's all for this episode of Development Dialogues. If you'd like to learn more about the Economic Growth Center, you can visit egc.yale.edu where you can sign up for the newsletter. And if you'd like to learn more about VoxDev, head to VoxDev.org, where you can also explore the VoxDevLit on climate adaptation. If you enjoyed this episode, please subscribe and consider sharing it and leaving a rating and review and look for the next installment of Development Dialogues wherever you get your podcasts.