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THE G-20'S DEVELOPMENT AND CLIMATE GOALS: INNOVATIONS IN SHIPPING

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P R O C E E D I N G S

MS. SIERRA: Good morning. My name is Kathy Sierra and I'm a senior fellow here at Brookings in the Global Economy and Development Program. And it's my great pleasure to moderate today's panel, which is being co-sponsored by a number of colleagues and institutions: Oxfam America, World Wildlife Fund, and Action Aid. All of us, Brookings as well as these co-sponsoring institutions, thinking about ways in which innovative finance can help fulfill the pledge made at Copenhagen and then again in Cancun and verified in Durban to provide $100 million -- billion, excuse me -- if it was 100 million I think it would be finished already -- $100 billion per year in support to developing countries for mitigation and adaptation support, and how to do that in a way that could also contribute to reduction in greenhouse gas emissions in an era of fiscal difficulties. We know that this has been discussed in U.N. circles. It will be discussed at the G-20 meetings that are upcoming in June, very much pushed by our colleagues in Mexico, among others, as well as be part of the background conversations happening in the upcoming meetings in Rio.

So today, we're here to discuss what the contribution of the shipping industry might be in that conversation, both as contributor to emissions globally as well as a possible source through the mechanisms that might be put in place under discussion now of financing that could contribute to that $100 billion goal. So we have a very interesting panel.

We have Dr. Michael Keen from the IMF. And the IMF, with the World Bank, have been very active in this space trying to develop the economics of interventions in both the shipping -- maritime shipping as well as aviation sectors.

Dr. Keen is deputy director of the Fiscal Affairs Department of the Fund. He was previously head of the Tax Policy and Tax Coordination Divisions. Before coming to the Fund he was professor of economics at the University of Essex as well as a visiting professor at the Kyoto University. Last year he delivered the 2012 Chelliah Lecture. I hope I've go that right.

MR. KEEN: Chelliah Lecture, yeah.

MS. SIERRA: Okay, in Delhi as well as being awarded in 2010 the Musgrave Prize. He's also honorary president of the National Institute of Public Finance, where he was president of that organization from 2003 to 2006. So he brings a deep background to this issue as well as some of the latest findings from the economic field.

He will be joined by Nigel Purvis. Nigel is a nonresident fellow here at Brookings in the Global Economy and Development Group. He's also the president and CEO of Climate Advisers. He has a deep background in U.S. climate diplomacy. He directed the U.S. environmental diplomacy under the Clinton administrations and also under the George W. Bush administration, most recently as deputy assistant secretary of state for Oceans, Environment, and Science. A senior advisor on this issue to the Obama/Biden campaign, as well as served as global vice president for policy and external affairs at the Nature Conservancy before opening his own shop at Climate Advisers.

Heather Coleman, who's to my far right, is a senior policy advisor of climate change at Oxfam. She's been there since 2007. She also serves on the board of U.S. Climate Action Network; has been a policy analyst at Northeast -- at NESCAUM, where she looked at regional and state climate related initiatives, as well as the development of the Climate Registry. She has a master's in environmental management from the Yale School of Forestry and Environmental Studies.

And then finally, to my left, unfortunately, Ambassador Charles Paul of the Marshall Islands was, unfortunately, not able to join us today. We do have a copy of his statement outside, but on his behalf he asked Keya Chatterjee of the World Wildlife Fund, who's been working very closely with Marshall Islands to both bring the perspective of the Islands as well as other small island states, and also speak to some of the points that he was going to be making in his remarks. She's director for International Climate Policy at the World Wildlife Fund. She's been there since 2006, and she also has served in USAID as a climate change specialist, and as well in Nassau and worked as a Peace Corps volunteer. So thank you very much for jumping in at this very late date because we just heard late last evening that the ambassador was not going to be able to join us.

So with those introductions, what we'd like to do is ask Heather to open the discussion by providing a broad overview of what the issues are in the shipping and maritime shipping industry and we'll then move on down the line to hear about the economics, the U.S. perspective, and then this perspective of the developing countries, particularly the Marshall Islands. So, Heather?

MS. COLEMAN: Thanks so much, Kathy. And thank you to Brookings for hosting this event. We're really thrilled to be talking about it here today. And just to those of you who don't know Oxfam, which is where I work, Oxfam is a global humanitarian and development organization with a presence in more than 90 countries globally. So I wanted to make sure you understood where I was coming from. We at Oxfam have been working on international climate finance issues for more than five years now.

So my job here is to frame the issue. Why are we talking about shipping today? And I'll mention aviation quite a bit as the sister to shipping, as a global form of transport. Both represent one of the fastest growing sources of emissions globally. Shipping itself already accounts for nearly 3 percent of global emissions. This is equivalent -- or more than the emissions of the country of Germany, twice the emissions of Australia, and they're projected to actually rise more than 200 percent by 2050. A single ship in one year can emit more than a small island state, which I think is an interesting fact.

I also -- one interesting note about shipping is that it carries 90 percent of global trade, whereas another global transport source like aviation just accounts for 10 percent of global trade.

So these emissions from shipping and both aviation were not capped under Kyoto. It was because it was very difficult to attribute emissions from these sectors to specific countries. And what happened is that the U.N. agencies responsible for these two sources were tasked with establishing emission reduction regimes for them, for both shipping and aviation, and that's the International Maritime Organization and the ICAO, the International Civil Aviation Organization. So they were essentially treated as countries in their own right.

So why are we talking about finance from shipping? The U.S. is on the hook to put money on the table for developing countries. And Kathy noted that we have a $100 billion commitment that actually the U.S. lead on making sure that commitment was included in the Copenhagen Accord in 2009. One hundred billion dollars by 2020 from developed countries and the U.S. needs to be a big part of that equation.

We have since -- the U.S. has since established the Green Climate Fund or been a part of the force in supporting the establishment of the Green Climate Fund under the U.N. framework convention on climate change. This happened a few years back in Cancun, in 2010, and has since been operationalized. The big question right now is, how are we going to fill this fund? This fund, it is assumed by many that this fund will carry a big portion of that $100 billion commitment, but there's no clear understanding right now of how it will be filled.

The U.S., we have congressional appropriations that is dedicated to international climate finance. That's somewhere around $3 billion, depending on how you do the math right now. But we do not expect that amount to go up in any substantial way. In fact, it's likely to just remain flat. Hopefully, it will not downturn.

So we need to find the money from somewhere and that money needs to come from new and innovative sources. Back in 2010, the U.N. High-Level Advisory Group did an analysis, looking at innovative sources of finance, and found that shipping was a viable source of finance at basically $25 per ton rate on carbon. It would generate about $25 billion a year. We're going to get more into that with Michael's comments.

Who are the players? I mentioned the IMO as the U.N. agency that's really responsible for global maritime safety and pollution. They've recently advanced a set of standards towards increasing the energy efficiency for new ships. This was actually a proposal that was led by the U.S., something the U.S. administration -- the Obama administration -- is quite proud of. The problem is that only represents about 1 percent of emissions in the sector, in the math that we've done anyway.

So we really need to be looking towards existing ships in terms of accessing new market-based mechanisms, and that's something that the IMO is currently doing. They're accessing market-based mechanisms, whether they be in the form of a fuel levy, emissions trading scheme, or others, to try to better understand and analyze which ones would have the least economic impact in the sector, and just globally, on trade.

Several national shipping associations have come out in support of a market-based mechanism in the sector. While the IMO has legal authority over addressing pollution in the sector, there definitely are other agencies that are getting into the game, so to speak. And in the context of the UNFCCC negotiations, for several years now there have been discussions around including language in an agreement that would instruct the IMO to both establish an MBM and also put a timeline forward on when that market-based mechanism would go into effect. And also the inclusion of a climate finance element to ensure that revenue would be raised from an MBM that would go towards international climate finance.

One more note here is that the EU recently has solicited input on how to regulate ships calling into European ports. This is something that recently happened in aviation, where aviation was included under the EU emissions trading scheme. It's been highly controversial globally. It's something that the EU is now considering to happen regionally for ships. And this also puts pressure on the global system in terms of how is IMO going to start addressing the sector?

Another note I just wanted to quickly make is that Oxfam and WWF have worked together on a paper -- I have a few copies here, if folks are interested afterwards

-- called “Out of the Bunker.” And in “Out of the Bunker” we put forward three principles that we as organizations working on these issues globally feel are necessary in looking towards a shipping mechanism.

The first is achieving meaningful emissions reductions in line with ensuring that temperature rise -- global temperature rise does not exceed 2 degrees Celsius or even 1.5 degree Celsius in certain -- in terms of what the science says; that there are no net costs on developing countries so that a climate -- we know that a carbon price has to be universal, based on IMO standards, but we need to ensure that there’s equity built into the system. So we need to, in many cases, recycle those revenues, a rebate for developing countries for any economic losses that they may have felt as a result of this global scheme.

It’s been estimated in our estimations that it would be around .2 percent in terms of the impact on global trade. This varies per country, but we think the impacts are negligible and there would be a way to rebate developing countries for any losses they do incur.

And then finally, that revenues generated would flow towards the Green Climate Fund. And in our estimates that would have to be at least $10 billion a year based on what we think the scheme would generate.

So, just a final note here, that we’re having this conversation prior to the G-20 Summit in Mexico City, happening at the end of June. The reason why we timed it like this is because the Mexican government has actually been a leader on issues of international climate finance. They led the charge in terms of ensuring that a Green Climate Fund would be established. And it’s something that they have noted -- the presidency has noted -- is an important issue for them going into the summit. We don't know exactly how it will be addressed, but we do know they'd like to address sources for revenue to fill the fund, and so what we're hoping is that conversations like this will help to inform the summit and leaders going to the summit. Thank you.

MS. SIERRA: Thank you for that overview. And I think we now have the full mapping.

I'd love to now hear from Michael in terms of what does economics tell us about this?

MR. KEEN: Thank you very much and thank you for the invitation. I should maybe say -- people probably don't instantly associate the IMF with shipping, so I should probably say a little bit about how we got involved.

As you know, the Fund is not an environmental organization, but when environmental problems have what we call macro-relevant -- when they're really affecting macroeconomic performance, financial markets, public finances, then, of course, it becomes an IMF concern. And clearly, sort of climate change in general passes all those tests. So it is generally an issue for us.

Specifically on the shipping, essentially last year the G-20 asked the World Bank, the IMF, and other international and regional organizations to report on how on Earth are we going to raise this $100 billion? Both public and private finance. And the Fund, I think consistent with our comparative advantage, took the lead on the public finance aspects, a large chunk of which was looking at aviation and maritime fuel taxes or fuel charges.

As Heather mentioned, the two industries are often lumped together, but

I think there are actually some important and interesting differences that maybe we can touch on as we proceed. So I should also add the caveat, we're not shipping experts.

Also, let me just make a quick remark on innovative finance. I mean, we were really interested in this as a kind of a pure revenue-raising exercise, independent of what use was made of the money. I think perhaps we might want to talk about, well, why do we need innovative finance? If we're committed to coming up with some money, why do you need to invent a new tax instrument? Presumably, you want to raise whatever revenue is needed in the most efficient, fair way. We can maybe come back to the sort of general issue of why we need an innovative instrument.

Having said that, I think there clearly is a strong case, whatever you want to do with the money, for market-based instruments: basically charges on maritime use of fuel. Now, I probably won't repeat the arguments that Heather's given you, with which, of course, we entirely agree. Maybe one footnote on that is, I think, for both aviation and maritime it's important, I think, to see charges on the fuel in the wider context of how these industries are treated more generally out of the tax system.

So, for example, under aviation there's a big issue that international aviation isn't subject to VAT, and this is in itself a big distortion. Less of an issue on shipping because most of that is freight, which shouldn't pay VAT or indirect taxes anyway, in principle. But there is an issue with shipping that it's increasing common now for shipping companies to be subject to very special corporate tax regimes, very favorable tax regimes. So I think, when we think about these issues at a sector level, we also need to think about how it fits in the wider context.

In terms of the impact, I think we're all agreeing that the revenue from

$25 a ton; CO_2 is about 26, 25 billion. Emissions might be cut, we think, by something like 5 percent. I don't think there's much argument over these kind of numbers.

To touch on some of the issues, I think one of the issues that's very striking and central in the shipping instance is that to work this really does have to be pretty much a global charge. As Heather mentioned, it's an industry convention. There are treaties and so on that impose this as a legal requirement, essentially equal treatment by flag carrier, and so on and so forth. But simply in terms of the economics of the thing, that the opportunities for ships to refuel wherever the price is cheapest are essentially huge. I mean, some of these big ships can travel around the world on a single bunker of fuel. It's very different from aviation.

Aviation, if you're flying from London to New York, you're not going to divert to Panama to pick up cheap fuel, also because carrying fuel is going to be expensive. That's not the case for shipping, for big ships. And really I think it's effectively the big ships that we care about in this. The emissions are very concentrated on the big ships and they're very mobile in terms of where they can pick up fuel.

So it really does -- there really is this challenge, even leaving aside the legalities, just technically of making this a universal charge.

Of course, one of the issues that then comes up, and I'm sure we'll talk about more, is what the impact on the lower-income countries, small islands, is going to be of this kind of charge. And, again, I think we're all coming out with roughly the same numbers. Freight costs might go up by something like 10 or 11 percent, but freight costs tend to be a pretty small part, in general -- of course, there are exceptions -- of total import costs, for example. So, most commodities, I think, people are saying, well, under

1 percent of an increase in price, which is not very nice, but it's, you know, in the broader scheme of things, this isn't huge.

Having said that, then let me touch on one particular aspect that we were very keen, I think, to pay a lot of attention to in the work we did for the G-20, which was this idea that you want no net incidents on developing countries, no net costs. It's very easy to say no net incidents on developing countries, but, of course, for an economist the question is, well, who's actually baring the real burden of these taxes? What is the real incidents?

Just because import costs go up does not necessarily mean that the full burden of that is being born by the importer. Maybe some of that is being born by the exporter. Similarly with exports. And, for example -- a simple example of this, I think would be actually in the aviation context where you say, well, okay, ticket prices to tourist destinations go up. But who actually bares the burden of that? Well, it may well be consumers in richer countries that bare the burden of that if ticket prices go up. In which case, in principle, if you were to give the money back -- the tax revenue back -- to the tourism country, that would actually be overcompensation for the losses suffered. Of course, there are all kinds of caveats to this, but those are the kinds of issues that we were quite keen, I think, to at least raise in the work we did for the G-20.

So we talked, for example, about how much of the burden would actually be passed back to oil producers, to refiners? How this depends on things like exporter elasticities, import demand elasticities, which really matters because you're really talking about coordinated tariffs. This is what it's akin to. It's like coordinated tariffs, coordinated export taxes. And, of course, export taxes can be good if they're coordinated across like everybody's exporting a product. That can actually be a source of benefit.

So I'm not trying to say there isn't an impact on developing countries, but I think we were certainly keen to say -- a lot of the debate, I think, hasn't really got to grips with actually thinking through the economics of this. Although possibly, at the end of the day, this is all small beer anyway and maybe we shouldn't get too obsessed by detail.

Final point I just want to touch on, if I may, is on the implementation, which is how we would actually do it? There's many issues there that I think are really still very much in the air. One set of issues is, well, do we have a trading scheme or do we have a carbon tax? And, of course, this is a familiar issue in all kinds of context. And I think our general view would be, well, either is better than nothing, but if anything, we would tend to prefer a tax. And we can talk about why that might be later.

More specifically to the sector, there is a discussion about the variety of instruments that people talk about that are really quite different. Some instruments see actually no intervention by national tax authorities at all, which actually sees shippers, for example, paying directly into some kind of fund, or shippers or whoever it is paying directly into some kind of fund. And so the IMO points to this precedent of the International Oil Pollution Compensation Fund where essentially money is paid, but it doesn't go through national tax administrations at all.

Another approach is to say, well, look, this is just -- this is a -- give me a break, this is a fuel tax. One of the simplest taxes that any country can essentially administer is a tax on fuel, so why don't we just go through essentially as much as we can national oil -- national tax administrations in terms of implementations?

So those sorts of issues are still very much in the air, but, of course, overarching all of this are more difficult governance issues about not only what happens to the money, but who is going to set the rate. Is it going to be a minimum rate? What currency is it going to be in? What are the rules going to be for the currency adjustment? There are all these kind of governance issues that I think have really hardly been touched on. At the moment I think much of the debate hasn't really moved on properly to these implementation issues.

But with those thoughts, Kathy, I'll leave it there. Thank you.

MS. SIERRA: Thank you very much. Now we're going to hear from Nigel, who's going to give us the U.S. perspective. And we do have a report that is -- I think we have some drafts available and we have a colleague, Sam Grausz, who's also in the audience and has been working with Nigel on it, that's trying to come to grips of what are the impacts in the United States of these policies? So that as well as a broader perspective on the political economy in the United States, Nigel?

MR. PURVIS: Great, thank you, Kathy. And it's a great pleasure to be here at Brookings and to be having a chance to be here with you to speak on this topic.

I have four points I'd like to share with you and the first is that the United States needs a robust policy on international climate finance. And I want to explain why that's so important, why that's essential for a climate solution and why the U.S. may, in fact, be lagging in that area.

So 98 percent of the growth in emissions that we're going to see in the next three decades are likely to be in major emerging economies and developing countries rather than industrialized nations. These are the emissions that are most cost effective to abate. This is where the opportunity to fight climate change is the lowest. And yet we know that it's developing countries as a group that have done the least to cause climate change, are the most vulnerable to it's impacts, and have the least capacity to adapt.

So an efficient solution, in order for it to be fair, is going to involve a partnership between developed countries and developing countries, where developed countries are asking developing countries to carry a little bit more than their fair share of the burden in exchange for some financial assistance in tackling the problem. If we do it on our own it will be too expensive. If we ask them to do it without some sort of partnership with us, it'll be unfair. And that's the fundamental dilemma. There needs to be some kind of partnership. The challenge of climate change is so large, the urgency of addressing the problem is so important, that we need this level of international cooperation and that's why climate diplomacy, not just in the U.N., but including in the U.N., is so important for our country.

So as we think about where the U.S. is on climate policy, so much of the attention is what are we doing with our own emissions? And I would argue that we're not doing enough, but actually as one looks at the trend there, it's actually okay. We are in the -- George W. Bush said that U.S. emissions were going to grow through 2025, and just a few years later President Obama said, in Copenhagen actually, U.S. emissions are going to be 17 percent below 2005 levels by 2020.

And while we haven't achieved all that we need to do, we've actually made some progress. And this has been a combination of good luck from a climate perspective, both having a lower than expected economic growth -- that's bad luck for the economy, but good luck for emissions -- a dash to gas with new technologies, and expansion of production in natural gas, which has displaced coal production for -- coal utilization for power plants, and a variety of other economic forces, together with good policy.

New standards for automobiles and a variety of other energy efficiency policies, those two things together mean that while the U.S. is still not doing enough, not doing its fair share, not doing what the science requires, there actually is a good trend. As we think about international climate finance, however, it's hard to see the same level of leadership.

There has been a significant increase in the amount of foreign aid that has been provided in the last couple of years, but there isn't really a plan, a plan for tackling this challenge, for ensuring that the level of resources that are needed in order to really partner with developing countries to get the scale of their ambition up to where we need it to be and yet to still have that be fair. That kind of plan doesn't exist. It's not coming from conservatives, it's not coming from liberals.

Had the Congress -- had the Senate passed a cap and trade bill, we would be in a different situation because baked into that policy were market mechanisms that would have channeled resources to developing countries. But since where we are today, it is unlikely to have a new, at the federal level, cap and trade policy. In the U.S., we don't, for the next few years at least, have a mechanism or a means to significantly increase the amount of funding that's coming from the United States to support action in developing nations. So this is the fundamental challenge.

Now, let me be absolutely up front, securing a broad consensus, a political agreement in this country that would involve consumers and industry and both political parties to support new levies or charges on any kind of fuels is not going to be easy. You know, we see the attention that has been focused on the price of gasoline in this election season, and that's likely to continue. While obviously shipping fuels are less front and center for consumers, the idea of charges on fuels is not particularly popular at this moment in this age of high unemployment and the age of austerity that we seem to be entering. So this is going to be hard.

And, in fact, if we look at the official U.S. position, the Obama administration is proposing that we, as Heather mentioned, that we tackle emissions through a combination of standards, which would perhaps have some contribution on reducing emissions from the shipping sector, but would not easily be a source of new revenue to be able to partner with developing countries, to increase their ambition, and to ensure that climate policy is fair. We can only speculate about what a Romney administration or what a conservative Congress would do in this area, but I think it's fair to say these probably wouldn't be policies that would be high on their agenda.

That said, I want to leave you with some thoughts about why this actually ought to be part of the political agenda and why it might not be as hard as it might initially seem, and that as we get serious about tackling climate change these are the kinds of ideas that are likely to come to the forefront. And there are a couple of different reasons.

First, if what we're trying to do is raise revenue to help accelerate action on climate change, the smartest way to do that is to do it in a manner that also creates -- reduces climate pollution. So, you know, there are other proposals that are out there, such as taxing, financial transaction rules, or doing other -- raising money from other sectors. While that would raise money, the actual instrument is not closely aligned with climate policy because it wouldn't actually have a beneficial climate effect by making pollution more expensive and then, therefore, less likely to occur. So as we're thinking about the design of revenue-raising mechanisms, linking something that both addresses our emissions, but raises revenue to help facilitate action in other countries, is a smart mechanism. And so in that design some kind of charge on both aviation and shipping emissions makes a lot of sense.

But more broadly than that is we think politically the other ideas that have been considered by the World Bank and the IMF, by the U.N. secretary-general's high-level panel on international climate finance, coming out of the Copenhagen and climate summit in 2009, are even harder politically in this country, even less likely to be supported by the political parties.

I'll take one example, taking advantage of your presence here, it's some have proposed, including George Soros, that we tap the capital of the International Monetary Fund and use that to accelerate green growth and climate action in developing countries. That idea did not go over very well with either the Democrats or the Republicans. And you can kind of -- as you go through the list of options that are out there, including financial transaction taxes, the idea of having a levy on shipping seems like the least politically problematic way. So as I think about what is likely to happen as we get more serious about assisting developing countries, about spurring climate action, this is a real place to focus.

Now, the final reason, and this is where I hope to really go a little deeper, is that economically this is a policy that we can afford, that the benefits would significantly outweigh the costs. And the paper that Kathy alluded to that is available, I think, just outside the room is an initial effort to try and fill in some analysis, provide some information in an area where very little work has been done.

So what did we look at and what did we find? We tried to quantify what the effect of a modest charge of the kind that would be likely to be considered would be on shipping fuels prices, on changes in import prices, on changes in consumer good prices, and changes in overall level of U.S. imports and exports. And what we found is that the benefits of this policy, because of the substantial social cost of climate pollution, would be quite substantial and yet the economic cost would be really modest. And we focused particularly on that cost element.

So when we speak about shipping fuels, our study concluded that whereas the price of shipping fuels over the last decade have varied by 240 percent -- in fact, they've gone up 240 percent from where they were a decade ago -- a modest carbon charge would likely have a 7 to 14 percent increase on shipping fuel prices. Similarly, that as we look at the overall impact on U.S. imports, that we would see a price change that would be smaller than the existing tariffs and taxes, quite significantly smaller, perhaps as small as 0.09 percent rising in our high end of our study to 0.26 percent on prices of imports. In comparison, the average charge for taxes and tariffs is 1.5 percent, so a fraction of the charges that shipping companies are already facing.

In addition, to the extent we are looking at what the consumer would feel and how those changes in prices of imports and exports would be translated into consumers, if we look at gasoline the product, the commodity, that as we see this year that consumers are most conscious of, the likely increase in price of gasoline would be as little as a tenth of one cent. So hardly as much a movement as we see in a normal week from just the regional changes in prices and changes in the global market for petroleum.

And so as we look at what overall consumer countries would face as we look at the imports, the change in imports, it would likely be roughly on the order of 1 percent change in the imports and the export quantities initially, and that that impact would taper and dissipate over time as the economy adjusted. And even in the interim period when there was this 1 percent change in overall imports and exports, there would be significant mitigating consequences. As we imported less, there would higher levels of production and, therefore, job growth here in this country. So even where there may be some modest effect, the overall impact on the economy is likely to be significantly less. In other words, our study quite significantly overstates the likely impact.

So this is not a general equilibrium model. This is an initial effort to try and provide some facts, to inform the U.S. debate. We hope very much that the Obama administration and other policymakers will keep this in mind as they head to the G-20, as they think about designing the processes and the diplomatic process that will be necessary in order to reach some kind of international consensus on this; that the overall economic costs to the United States are really very modest.

MS. SIERRA: Thank you, Nigel. And I think we have a nice overview of the political regime -- well, not regime, but where we are politically as well as the costs and what the cost-benefit is going to be, I think, part of the conversation.

Keya, from the point of view of the developing countries, from those that are looking for this finance and also recognizing that they're going to be suffering from the effects of the climate impacts, what does it look like?

MS. CHATTERJEE: So I'm going to speak a little bit specifically about the Marshall Islands since the ambassador intended to be here today and tell the story of the Marshall Islands.

Many of you probably don't realize that the Marshall Islands is actually a major global force in shipping. It unusually skyrocketed from a relatively small maritime registry to the world's third largest flag state. So the Marshall Islands has a lot of interest in the shipping industry and they take this responsibility very, very seriously. They have high standards for ships that register with the Marshall Islands, and they're an incredible force in the shipping industry and a powerful voice for that reason within the International Maritime Organization.

On the other hand, the Marshall Islands is also a small and vulnerable island nation. It's a narrow coral atoll. It's about two meters above sea level, and they are incredibly vulnerable to the impacts of climate change. When I first started working with the Marshall Islands, about five years ago, I met with the ambassador, their ambassador to the U.N., and he was appealing to me on a national security basis and saying to me, you know, what if these coral atolls disappear? What is the U.S. Navy going to do? The U.S. Navy relies on making its way through the Pacific because of the waters of these island nations. And he was really making the case to me on those grounds.

And later, as I got to know the individuals from the Marshall Islands, I came to learn this broader story about the impacts, which is really much bigger than the impacts to U.S. national security and the Navy, and really has to do with their survival. You know, even relatively modest current estimates would show almost a meter of sea level rise by mid-century. So that's a big deal for a country that's two meters above sea level and doesn't have any high points. And that's based on the observed increased ice melt that we've been observing in recent years.

Interestingly, a big part of the impacts in the Marshall Islands are also things that we experience here in the U.S. It's an increase in flooding events, like what we saw recently in Vermont. It's sea level rise, like we know we will experience in Florida. The big difference is the Marshall Islands did nearly nothing to cause the pollution that they are now having to deal with. Many, many developing countries are now in this position where they need to be protecting their infrastructure from the impacts of climate change. Obviously, for national security reasons, it's in our interest. It's also in our interest to help them protect our infrastructure because we have multinational corporations based in the U.S. that rely on telecommunications infrastructure, that rely on transportation infrastructure being intact all over the world.

So from the perspective of the Marshall Islands, they're incredibly vulnerable, like many other small, developing countries. They see clearly that there is a need for resources to help countries prepare for the impacts of climate change, and they are a major player in shipping. And so what they have done is they've joined a group of countries that are both developed countries and developing countries. Denmark, Nigeria, and Cyprus have come together in a coalition within the IMO and suggested how they would like to implement a market-based measure within the IMO. So the plan they've laid out is an emissions training system essentially. It has a cap. The revenue goes -- part of the revenue goes towards the actions within the industry to increase efficiency, and a portion of the revenue goes towards these international adaptation efforts, efforts to help countries prepare for these impacts so that they are not as devastating, the impacts that we already know are locked in at this point.

The Marshall Islands does not actually support no net incidents. They don't see common but differentiated responsibilities as being something controversial. This is the principle within the UNFCCC, where different countries take different kinds of actions. And from their view that's not something controversial that different countries would take different kinds of actions and be treated differently. And that can really be dealt with largely through this finance.

And so from their perspective if you have the revenue raised from a price on carbon and the shipping sector going towards the most vulnerable countries, that takes care of the different responsibilities that different countries have. And from their perspective they really see that all countries have a role in this. I think we've seen this in recent years within the international negotiations that the most vulnerable countries have stood up and said, look, all countries need to do something about this problem. It's just we don't all do the same thing exactly.

There's an incredible moral authority when a very vulnerable country that plays a big role in the shipping industry is willing to stand up and say there is a solution here and there is a way that our study ends well. So I just wanted to tell you a little bit of the story of the Marshall Islands and leave you with the thought that the end of that story depends entirely on whether we are successful in actually pricing carbon, putting policies in place that raise revenue to help countries prepare for these impacts, and to reduce their emissions further, and also reduce greenhouse gas emissions.

Countries like the Marshall Islands actually have an incredible amount at stake. They may have to, you know, lower their flag from outside the U.N. and not be in existence if we don't get this right. And the shipping industry presents us with an incredible opportunity. There's a lot of pressure on the system because, as Heather talked about, the movements by the EU. There's an incredible opportunity within the IMO because it's moving quickly. And there has been an incredible amount of momentum injected by the kind of analysis that the IMF and others have been doing in this sector.

And the story of the Marshall Islands remains to be seen how the story ends. And I'll end by urging everyone to do our part to make sure that it's not a tragic ending, but it's one that allows island nations to thrive.

MS. SIERRA: Thank you. So we have leadership, real leadership, coming from the Marshall Islands, both in terms of the substance of the shipping industry, but also leadership of a different point of view, I think, from what we often hear from the small island states and developing countries in the climate negotiations. So that's very hopeful, but I am struck by the not-so-hopeful on points that Nigel was making and about how difficult this might be in the United States.

So I'd really like to maybe ask Heather and Michael what are you hearing outside of the United States in terms of this? Are countries going to go ahead without? We've heard that it's got to be a global solution. You know, where are we? Heather, how do you see this?

MS. COLEMAN: You know, there are a variety of both developing and developed countries who have expressed support for a type of market-based mechanism to be in place that generates finance. So it's not just the small island nations that are out there sticking their necks out on this issue, but it's also France, Germany, the UK at times, and others. So, you know, I think it's important to understand that there are groups of countries that have continued to talk about the need for generating finance from this sector and, in fact, South Africa recently had expressed an importance of revenue generation in this sector.

So I think that the politics are getting there. I think it's really important because the secretary general of the IMO essentially just laid out a timeline in which he said by 2015 we will have a market-based mechanism to be implemented. That's significant because that timelines is in line with where negotiations are headed right now under the UNFCCC. So I think that's actually quite helpful in terms of setting a clear deadline for when a mechanism should be in place. And it's one of the few areas in which I think a very clear deadline has been established and a timeline has been established for this.

And I think, you know, while the U.S. politics are really tricky, at the same time you hear Todd Stern and Jonathan Pershing, who are the lead negotiators for the U.S. in the climate context, talking about how this is one of the more viable forms of innovative finance. So when you talk to -- when you really question them around these issues, this is the sector that they do point to, so I also think that's significant. And even though we do have some hurdles, it's important to know that there is some support in the administration.

MS. SIERRA: Michael, you walked through the economic side. I found it very persuasive. The question I have is, is the economic argument that you were making, is it well accepted? So are countries that are engaging now in this conversation, do they agree on the basic principles of what the impacts would be and the like, and so it really is about the political economy, or are we still seeing pushback on the economics?

MR. KEEN: I think the economic -- I'd say the economics is very well accepted. I think it's kind of -- it's almost a no-brainer really that this is a sector that is -- the emissions are under taxed. Whatever you're doing with the revenue, it's clearly -- that the tax policy case, I haven't seen anybody really argue against it. Certainly the efficiency argument. There are these kind of distributional issues about winners and losers. But in terms of pure efficiency, no, I think it's pretty well accepted as I think, too -- which relates a little bit to the politics -- I think the notion that this really is an area where I think it's quite difficult for subsets of countries to go ahead without others more than in most other areas of policy.

So if the -- I mean, the example people give is, and others here may know more, I mean, I think in the early '90s, California tried to put a tax on bunker fuels. And I think within, you know, a few months, 80 percent of the business had gone. Everyone was bunkering in Panama. So I think this -- just in terms of technicalities, I think going ahead without subsets of countries is very difficult.

And, of course, a lot of power here actually resides with small countries. Actually it's interesting, in many of these tax problems it's actually the small countries that potentially have a lot of power in terms of undermining agreements, but I'll leave it there.

MS. SIERRA: So Nigel, how do we get our way out of this dilemma? You put some problems on the table, but maybe a little bit of hope. I mean, what are the levers that one could see in the U.S. political economy that might be able to shift the politics here?

MR. PURVIS: Well, I think it's incredibly important that we reestablish some momentum that we had nationally and here in Washington for a serious climate policy that was building five years ago and culminated in the disappointment for climate advocates of the fate of the cap and trade bill in the Senate. Without a seriousness to address climate change it's hard to imagine that climate policy has much chance, so reestablishing the scientific consensus is important. I think there's a lot of progress that's been made. You know, the American people are strongly supportive of the science despite what we tend to hear here in Washington.

Translating that into policy, of course, I think requires leadership by policymakers. And so what I really hope will be possible in a new political environment after this election is a return to serious discussion about the role of the United States in spurring climate action both domestically, but also internationally. And it's that -- as I said, the lion's share of the growth of emissions, most of the adverse impacts from climate, both of those things are happening in developing countries. And we really don't have a climate policy, a complete and coherent climate policy, until we have climate policies that deal with those issues.

So it's going to require leadership by people who do care, but also political leadership by our political parties. That means getting past the moment where we have -- where there's this almost reflexive response on climate policy. And I think depoliticizing that is going to require moving -- in my view, moving sensibly issue by issue, sector by sector on things that really do make sense to a broader group of people than we find is the case when we talk about carbon policy or climate policy more broadly.

There are, you know, fortunately, a fair number of climate solutions that are actually good for the economy, and I think we need to get serious about implementing those. And as we get serious about assisting developing countries, these kinds of policies, such as aviation and shipping charges, that really don't have a significant adverse impact on the U.S. economy and that contribute to U.S. nation interests in so many other ways, whether it's from security or development policy, humanitarian policy, economic policy, those are the policies that will have a chance in a new, less partisan environment.

MS. SIERRA: And maybe some of the work that you're doing as well as others to actually demonstrate that these are actually reasonable cost-effective interventions.

The Marshall Islands is not part of the G-20 -- G-8. They seem to be very effective in playing their role in the IMO. What are the international levers that countries that are outside of that club, what are they using?

MS. CHATTERJEE: The conversations in the IMO have been obviously very inclusive, particularly of countries that hold a lot of flags. And that is a place where a lot of these conversations have been happening. There's also conversations within the U.N. climate talks, in the U.N. Framework Convention on Climate Change, on these issues. And those are spaces where smaller nations have some room to provide input on how to advance these issues.

I think that it's also important to note that most of these small countries that really want to see action in the shipping sector are in very, very close alliances and in coalitions with countries that are larger than themselves. So I mentioned that the Marshall Islands is working very closely with Denmark and others. They are working with countries who are in the G-20.

Mexico, as Heather mentioned, has been an incredible advocate for the need for climate finance and is actually the presidency of the G-20 and has been doing a lot to reach out to some of the smaller developing countries to bring that perspective in to the G-20 talks. So I think there are a lot of spaces where that perspective comes in to the G-20.

MS. SIERRA: Great. So we've, I think, gone over the waterfront. Excuse the pun on the sink and swim. There are a lot of puns in this business. So it's now time to turn to the audience and I open the floor for questions.

What we're going to do is take two or three and then direct them to the panel and vice versa. So I think we had one right here at the edge. We have a microphone coming.

And if you could please introduce yourself. Thank you. We'd appreciate it.

MR. KOCH: Sure. My name is Chris Koch, president of the World Shipping Council.

First I'd like to identify the fact shipping is not one industry, there's many within that industry. We're the containership sector, largely. And as the paper notes, we do have a proposal submitted to the IMO to try to address this issue through a different approach of improving efficiency rather than taxing the industry.

I guess what I'd like to observe today is that, you know, for centuries, governments that don't have enough money to pay for their spending ambitions have proposed various kinds of tax increases. And what's being discussed today as an innovative source of financing is really nothing other than a tax increase on a particular industry. Mr. Purvis, you said it's the easiest tax, and that is a debatable proposition, but I think that's what we're talking about.

The liner shipping industry, which we represent, lost over $6 billion last year and is on a course to lose that much again this year. It doesn't regard itself as an object that desires to be taxed on.

Now, the other thing is transportation produces 22 percent of the CO2 emissions that come from global fuel combustion. Now, of all modes of transportation, international shipping, which is the most carbon-efficient, produces 8.75 percent of that transportation emission. It produces roughly 2 to 2.7 percent, somewhere in there, of total global emissions. So I question the logic of singling out international shipping for taxation when aviation, rail, road transport, fishing, and domestic maritime transportation produced 11-1/2 times more emissions and transport altogether produces only roughly 20 percent of the total emissions that we're trying to deal within the climate agenda.

I would note, because a question came up regarding the IMF background paper, that we don't believe that the premise of that is correct. It says that shipping fuel is, "undercharged from an environmental perspective because unlike domestic transportation fuels, they are subject to no excise tax to reflect environmental damage in fuel prices." Well, the taxes on road and diesel fuel doesn't go to reflect environment damage. It's for building more roads and DOT programs. The fuel taxes on aviation go to fund FAA and building new airports, not to reflect environmental damage.

Now, today fuel cost is the largest single cost of our industry. It's one of the reasons they're losing so much money. And because it's the largest cost, everybody is doing everything they can to reduce fuel consumption and become more fuel efficient.

Bigger ships, super slow steaming, waste heat recovery, those things are all underway as ways to try to be more efficient, try to reduce emissions from the sector. But the idea of simply a fuel tax doesn't reduce emissions. The impact of this tax is not going to reduce emissions, so it's simply a tax that's not going to have the environmental benefit of reducing in-sector emissions.

But even if your objective was just to raise fuel tax through this kind of thing, I would point out that the IMO secretary general has stated that any revenues raised should not exceed shipping's percentage contribution to the global CO2 emissions. So even if you go down this road, if you're consistent with the secretary general, you're talking about 2.7 percent of your 100 billion, not the 26- to $30 billion number that's being thrown around.

Further, this concept would require the negotiation agreement within the IMO of a new treaty. Now, what's going to have to be done for that? First, you have to get agreement on the treaty, then you're going to have to get enough governments to ratify that treaty for it to come into force. There's going to be a lot of obstacles to that, including some of which would be the BRIC countries' position at the IMO, which is the regime shouldn't apply to their commerce or their vessels. You have the UK announcement at the IMO a couple years ago that a fuel tax is something they couldn't support. You have governments looking at these revenues as a way to -- if they're looking at revenues in this economy they're going to try to grab them for their national treasuries instead of going off to an international fund. You'll have importers and exporters looking to pay these taxes when they get no reduced emissions or more efficiency out of the fleet. And, frankly, it's difficult to conceive the U.S. Congress ratifying such a treaty, at least under the present circumstances.

So I respectfully suggest that I understand the objective to try to come up with $100 billion of climate financing. You might not be surprised to think that the shipping industry doesn't view itself as the ideal innovative source of funding all of that.

MS. SIERRA: Thank you very much. And I appreciate your comments, especially since we didn't have you up here. Perhaps we should have, so I gave you a little bit more rope than I will the rest of the audience. And I will ask the colleagues to reflect on that position, which I think is what is being debated in here.

Behind you there was a question.

MS. GANT: I'm Mary Gant with the National Institute of Environmental Health Sciences at NIH.

In your benefit analysis, your cost-benefit analysis, have you considered the immediate health effects, not the long-term health effects of doing something about climate change, but the next day health benefits? And they really are considerable.

The clearest example of that is if you remember back during the Olympics in Atlanta, due to the incredible congestion in that metropolitan area the local people were asked to work at home and not to drive. And they really were good citizens. They did not drive. The car traffic dropped precipitously during that time. And the curve for emergency visits to the hospital for children with acute asthma attacks just dropped; stayed down for two weeks. The day after the Olympics it went right back up to its historical levels. And people said, well, people were staying home, so they just didn't go to the emergency room. But all the other reasons people go -- went to the emergency room stayed exactly the same.

MS. SIERRA: Thank you.

MS. GANT: So those benefits are enormous.

MS. SIERRA: So we'll try to get to that as well. One more question right here in the middle.

MR. LEVINSON: Hi. My name is Marc Levinson. I'm with the Congressional Research Service.

Your paper's quite interesting, but it seems to me it doesn't really devote adequate attention to microstructure of the shipping industry, which I think is relevant in reaching your conclusions. And I don't want to endorse what was said by the World Shipping Council here, but I do want to raise a couple of points.

One is that a fuel tax increase of the sort you're suggesting, whatever form it's taking, would instantly make a large part of the world shipping fleet obsolescent. Okay? There are a lot of old and inefficient ships floating around out there. These would need to be scrapped. They would presumably need to be replaced. So you're talking about premature scrappage potentially of a large amount of capital with some economic consequences that you might want to consider, particularly because those old and inefficient vessels are overwhelmingly the vessels that are used in the poorest countries. Okay. The poorest countries typically don't have modern ports, they don't have large flows of cargo. They get the junkie old ships, and so there's some risk of actually driving up costs for those countries and for actually creating more emissions by the need to prematurely replace this capital.

The other point I wanted to raise is with respect to the container industry. And this is an industry in which there has been extreme market concentration just in the past few years. The policies that you are recommending here are likely to lead to increased concentration in this sector, and I think you at least need to explore the question of whether that would have consequences for the cost of trade that go beyond those that your models suggest.

MS. SIERRA: Thank you very much. So let's now turn it back to the panelists. And we had an intervention that said, you know, this is not fine, you know, so this is not settled and we actually contest some of the analysis. Another question that said, well, maybe I don't contest the analysis, but I do think that we need to do a bit more on the incidents questions and the microanalysis of the shipping structure. And a different question which is really about the health aspects, and that speaks to all climate policy, not just that of shipping.

So maybe, Mike, if you can start us off on what does the analysis tell us in terms of some of the interventions?

MR. KEEN: Sure.

MS. SIERRA: And I'll ask others to also intervene, Heather and Nigel, as well.

MR. KEEN: Sure. Well, let me start off with the very interesting comments from the gentleman with the shipping association, many of which I agree with. We are talking about a tax on a particular industry. And there's a lot of -- even if you read our report there's a lot of talk about charges and levies and all these things, but my gut feeling is we should just call it a tax. It may be through a permit price or whatever, but it is a tax on a particular sector.

Having said that, I think certainly in everything we do we're really quite careful to hope to try to say that clearly what we prefer is a uniform carbon tax -- let’s call it a carbon tax; it could be a carbon trading scheme -- that’s applied to everyone. And the other work that I mentioned we did for the G-20 I think was very much setting out that vision. And I don’t think we really do single out shipping. As you mentioned, we talked about aviation, I think in our report as equally about aviation, where I think we make some of the -- many of the similar arguments.

And I think you make a good point, it is important to see this in connection with treatment of other forms of transport. And I think it’s true, when we think about, for example, fuels on road transport, clearly they’re not -- you know, excise fuels used in road transport -- clearly they’re addressed to a variety of (inaudible) because, as you say, they’re partly also to do with congestion. Some of it’s going to road use. In most countries that’s not the case, it’s just going to general revenues, but it’s correcting for a variety of externalities that would not, you’re quite right, apply to shipping: congestion charges, accidents maybe to some extent. But nonetheless, I think, there is a component in there that one can rationalize, maybe not in the U.S., but in many other countries there’s a component in fuel charges you can rationalize as being a carbon or climate-related, which doesn’t apply to shipping. Although, of course, we recognize shipping pays other charges. There are all kinds of other charges shipping and aviation pay, but they’re not rationalized or serving, I think, the function of the carbon price.

On the loss-making aspect, of course, here I have to be the hardnosed economist and say that if an enterprise can’t make a profit when it’s not paying costs that reflect the full social damage its activities case, then it should go out of business. And we’d say that for shipping and for any other industry. In a sense the question would be why would we want to subsidize an industry by providing it access to the environment for free when it's essentially eroding that?

And you're quite right, I mean, I think you're right to remind us that actually this probably would require a treaty in the IMO. And I think this is not -- we should remember it's not true.

I think there is -- correct me if I'm wrong -- there is, though, a difference between aviation and maritime. Aviation you have the problem that we're already tied up by lots of legal agreements that are very hard to get out of, which is kind of the EU issue. Maybe we can hope at least that we're not going to be tied up quite so much by existing rules relating to charges in maritime.

I can't quite see why it wouldn't impact emissions. If the carbon price was infinitely large, presumably there'd be no emissions. So I don't quite see why there wouldn't be an impact on emissions.

But, I mean, you're right to remind us, of course, that there are efforts at technical improvement going on; the July 2011 agreement in the IMO, there are important things going on. We can argue as economists to say, well, actually pricing measures are a more effective way of achieving these reductions than quantity restrictions. Of course, in this context, we're looking to raise money, which brings in separate considerations.

Perhaps just on the microstructure let me just pick up. I mean, the old, inefficient ships, of course, at some point you have to start somewhere, right? I mean, at some point you have to -- otherwise we're always going to say there are these old, inefficient ships. And again, of course, the July -- the IMO agreement as I understand it is moving towards greater efficiency of the big ships, which are the ones that we really care about for emissions.

I think your point about market concentration is actually a fair one. And I think insofar as we've thought of maybe doing more work in this area, that's something we might want to think about because you could argue that, well, market concentration, of course, may actually be good for emissions if there's a restriction of output going on. Then it's actually reducing emissions already. It's sort of, you know, monopoly is the environment's friend sort of argument. But I don't have a take on that issue at the moment, but I think there are many good points and reminders there. Thank you.

MS. SIERRA: Heather, did you want to address these issues?

MS. COLEMAN: Yeah, just a few quick things. Just a quick response on the gentleman from CRS. That's in many ways why we as advocacy organizations have been advocating for some sort of a rebate mechanism because of the potential disproportion in impacts on small island nations and least developed countries because of the old, dirty ships going to port in those countries. So I just wanted to make sure that that was clear that that was part of our calculus.

And we have looked at having a de minimis threshold and looked at a variety of different elements that you could integrate into a program. And many of these de minimis questions are actually quite tricky when you get to a uniform standard. So I'll leave it at that.

So glad that Chris Koch is here from WCS. And I thought you brought up some really good points.

And I won't repeat what Michael just said, but I will say a few things. Number one, you're right, the politics of a new treaty, we're all seeing what's happened with International Law of the Sea. We know how hard it is to pass a new treaty in the U.S. Congress. However, we are looking -- or some of the organizations here today are going to be looking and doing more legal analysis and policy analysis to think harder about under existing U.S. law and standards what could actually go into effect in terms of an international approach to shipping. So we all recognize those political hurdles and we are looking at that.

Now, in terms of the percentage of the 100 billion that you mentioned, I mean, we as advocacy organizations have been advocating for, you know, 10 billion of that money to go in. I think, you know, regardless of where you stand, there are a variety of different levels that you could say would go in terms of the revenue generation towards international climate finance. And there are good arguments on all ends around what the percentage should be.

On the question of -- I think I would just reiterate -- or I'll just say something new in addition to what Michael said, that we know that shipping constitutes a small portion of overall emissions from the transport sector. We as advocacy organizations, we don't want to run a double standard. We're advocating for U.S. transport emissions and transport emissions in other countries, because both of our organizations are present globally, to be covered under some sort of scheme, whether it be a market-based mechanism or we'd ideally like to see some sort of an emissions trading scheme. So we want to see a carbon charge. We want to see it on all forms of transportation. We're advocating for that. This is one area where, you know, it's an international -- international shipping is just a different category. It's a different -- we talk about it in a different way than we talk about these other sources. So I just wanted to make that clear.

MS. SIERRA: Nigel, and you can maybe pick up the health question as well.

MR. PURVIS: Yeah, I will. So, you know, we subconsciously described our study as the beginning of an effort to inform the debate and to provide some quantitative information that can be used by policymakers, but we would very much welcome some additional analysis by CRS or others to take the analysis a step deeper.

On the specifics of your concerns, I don't quite understand why a 7 to 14 percent increase in fuel charges, which is what we modeled as being the most likely given the political environment that's out there, why that would lead to a fundamental restructuring of the industry when the industry over the last decade has seen a 240 percent increase in fuel prices. So I'd love to, perhaps after the discussion, just understand whether I'm missing something. If we are, we certainly would want to reflect that in our paper, which is still in draft.

You know, in terms of the -- from an economic standpoint, what the container industry is proposing of a standard creates a shadow price for emissions that is really, in economic terms, not that different from what a levy or tax would do. And it all depends on the level in which they're set. So, you know, just as when our fuel efficiency standards for automobiles had the effect of increasing the price of a car, you know, a standard can have an economic impact, can send the shadow price to consumers just the way a tax can. And it's really a question of whether the industry is proposing something that is a business as usual rate of improvement or efficiency or whether it's something further. If it's something further, it would have an effect that is not that dissimilar from some kind of tax or levy.

And, you know, our analysis -- and we didn't do original analysis here, but we did survey the literature. And what we found is that the leading economic studies of the shipping industry have shown -- or actually of carbon charges generally have shown that the incidents of any new taxes are really passed on by the transport sector. So you would have -- and the cost not being borne directly by the shippers, but really then passing it on to the folks who -- and end up in the price of the consumer goods and other things that are affected. So the actual impact, the thought that this kind of a charge would destroy the industry compared to a standard, I think is just really false. It really depends on the level and it depends on whether those assumptions about the different elasticities of supply and demand that have been assumed are somehow wrong. And again, our paper's still a draft and I'd love to hear more if there -- from folks if they have additional information or studies to share that are not reflected.

On the health point, you know, we didn't try and do a broad economic analysis of the cost and benefit of climate action. What we did do is try and give some -- shed some light on the potential cost of this specific type of policy that would generate revenue and have an effect in reducing emissions. We did look a little bit at the costs and -- excuse me, of the benefits as well as the costs. And in the paper you'll see a citation to a study on the health benefits of reducing pollution from the shipping sector to immediate port communities, and that's an illustration of the broader point that you're making. But our paper is very limited to the specific policy and sector.

MS. SIERRA: Thank you. Keya?

MS. CHATTERJEE: The Marshall Islands actually has a registry that operates relatively close to here in Reston, Virginia, which is another part of, you know, the shipping sector, and very much appreciate your perspective that it's not one industry. There are many, many different perspectives within the industry.

In talking to the Marshall Islands' ship registries one of the things that they know is how exposed this industry is to the impacts of climate change. And just as the Marshall Islands is very exposed, ports are very exposed. Their infrastructure is very exposed. And so I know that they have a view that it would make sense to put a price on carbon in the shipping sector. I know that the International Chamber of Shipping has stated that they support a price on carbon, a global price on carbon for the shipping sector. And so there are a lot of different perspective.

Of course, no sector wants to move first and that's one of the trickiest things about climate change in general. It's not really that fair for anyone to have to go ahead of anyone else, but somebody's got to go first. We are working equally with every single sector to make sure that we price carbon, but it's going to be really hard to make everyone go at the exact same moment. And so there is going to have to be a sector that moves ahead of another sector, but, you know, hopefully, there is not a big time lag there because we are working equally hard on all sectors, speaking, you know, from the perspective of civil society.

MS. SIERRA: Thank you very much. I don't know that that gives you much comfort. (Laughter)

Let's open it up for more questions. Lisa. Right here in front.

SPEAKER: Thank you. Nice to see everyone. Mine is really just kind of a logistical question, which is what comes next? I mean, tax on shipping and aviation kind of rose to the top of possibilities a little while ago. I mean, we're hearing a lot about it in Durban. Aside from conversations like these and building the momentum, you know, in the absence of U.S. policy, you know, or others, I mean, what do you want to see at the G-20? Is it something in a communiqué or is there something in Rio at that could happen on this? Is there something specific that could happen at the next U.N. meeting? Thanks.

MS. SIERRA: Thank you very much. The next.

SPEAKER: I had a comment and a question for Nigel. One comment is I just wanted to express that in addition to excitement about bunkers, there's also excitement right now about financial transaction taxes. And I just wanted to say that I was in Chicago last week for a Robin Hood Rally that had thousands of nurses in the street calling for a Robin Hood tax or a financial transaction tax. And in the strategy meeting leading up to that rally people were eagerly talking about using some of that money for international climate finance. So it's going to be a slog, but just like bunkers are going to be a slog. So I just wanted to say that there is actually a popular moment right now in support of a financial transaction tax.

And the question I had for Nigel is how do you see overcoming the Obama administration's, let alone Congress, but the Obama administration's sort of resistance to the idea of common but differentiated responsibilities and sort of an allergy almost to equity discussions as a political -- just -- yeah, how do you see overcoming that?

MS. SIERRA: Thank you. The gentleman behind.

MR. BORGFORD-PARNELL: Thank you. My name's Nathan "BP" from the Institute for Governance and Sustainable Development. I have also have a question for Nigel, but the entire group as well. It's sort of parallel to your overall informative discussion.

Considering the happy announcement out of Camp David this past weekend, that the members of the G-8 had decided to take positive action on short-lived climate pollutants by joining the Coalition for Climate and Clean Air XXX[*sic*]; SHOULD BE "Climate And Clean Air Coalition"XXX, and also considering that Mexico was a founding member of the CCAC, and the importance that combating SLCPs has for human health and food security, do you see any light in the future for a similar announcement in the G-20? And are there any options or levers that we could pull to make that happen? Thank you.

MS. SIERRA: Thank you. And one last question right up front here.

MS. BOYLE: Hi. Meg Boyle with the Connect U.S. Fund. We're happy to have the opportunity to support some of this ongoing work. And I'm wondering if you can kind of give us a scenic overview of some of the stakeholders kind of on the business end of things. And one of the earlier comments spoke to subsets of the shipping industry, but kind of in and beyond the industry who's, you know, thinking about this and talking about this on that end?

MS. SIERRA: Thank you very much. Let me ask Heather to talk a little bit about what you see in terms of hoped for and maybe likely outcomes of the G-20 and at Rio. And then we've got two comments directed to Nigel on calling for differentiation of responsibilities, short-live pollutants and the like. And then I'll ask any of the other panelists who'd like to weight in as well. Heather.

MS. COLEMAN: So I think getting something on international transport in the G-20 communiqué is a long shot. I mean, I think we're likely -- in an ideal world, I think getting meaningful conversation to happen amongst finance ministers at the G-20 would be incredibly helpful towards driving some momentum in this area. So I think that's what many of our organizations are looking for is that meaningful conversation.

I think at Rio+20 we're also not likely to see any official statements on this issue. I think there's more momentum moving towards the Sustainable Development Goals as a whole. But, however, there could be -- and I'm not aware of whether or not there would be -- any sort of bilateral agreement between a few countries on this issue and in moving this issue forward, so that's feasible.

But I think most notably where this is going to move forward is in the IMO context. And so the IMO has a committee called the Maritime Environment Protection Committee, and they are moving forward and doing further analysis on market-based mechanisms. And this conversation will continue in the fall when they meet again. I believe it's going to be in the fall, I'd have to go back and check. They last met this winter. And again, they're moving towards this 2015 deadline. So I think that's where we're going to see some really concrete action happen.

In the UNFCCC context, I think it remains to be seen whether or not in Qatar we're going to see movement on innovative sources and whether or not there's going to be some language in the agreement and what comes out of Doha on these issues. I think there's -- right now it's all playing out in Bonn whether or not that's going to even be a possibility. And a lot of the negotiations happening now are just around some of the structure of the negotiations as a whole and we haven't yet figured out exactly where this area of finance is going to fit in, so to be continued on that front.

Just one quick thing on the business stakeholder front. There are companies who are starting to pay attention to this issue, companies that, of course, rely heavily on global trade -- which is the majority of companies that produce any sort of widget-type item -- care about greenhouse gas emissions in the sector. And they are thinking about how do you reduce emissions in this sector and how should we inform our advocacy around climate in this way. And so we are starting to have conversations with companies about this. But also, you know, I think there's some question around port authorities and their role to play in this because of how much it clearly relates to particulate pollutants and the overlap there.

MS. SIERRA: Nigel?

MR. PURVIS: So, you know, I have some sympathy for the U.S. climate negotiators for the administration on the issue of common but differentiated responsibility. As a former climate negotiator I have the experience of knowing that when most countries in the climate context say, "common but differentiated responsibility," they really have meant for the last decade that means you do everything; in a couple decades maybe we'll think about it. And as long as the phrase conveys that, it's understandable that the U.S. is concerned about that. And, you know, clearly the Byrd-Hagel Resolution reflected some opposition to that sentiment at the time that Kyoto was negotiated.

So the key -- and yet I want to be quick to say I actually don't think that the notion of common but differentiated responsibilities inherently needs to mean that. In fact, we have history in the Montreal Protocol, which is the treaty that deals with ozone-depleting substances and our effort to repair the ozone hole, of applying such a principle in a way that, in fact, meant something very different; that we would all act and do so in a manner that's commensurate with our capacity and our responsibility. And that sentiment really ought not to be ideologically difficult for the United States or for other developed countries or even for the Congress, which was quick to approve of the Montreal Protocol, but was very opposed to that application of that phrase, that concept in the Kyoto Protocol in a very different way.

So I think the key, the key to progress, is to redefine what common but differentiated responsibilities means in a manner that is fair to both developed and developing countries alike. And that's the kind of conversation that I think is very hard to have and is going to take some time to mature, and is going to need to be reflected in text or specific principles about how and when countries take action. So what we have in the Montreal Protocol, again, to extend that analogy, is a clear graduation process, where countries at date certain would take on some additional responsibilities. It was clear that everyone was going to act from the beginning. Just the phasing, the timing, and the level of cost and ambition was going to be different based on the level of development. That's extraordinarily different from Kyoto, where there was a carve-out for the vast majority of countries and the smaller number of countries were asked to take an initial step.

So I think there are folks who would defend Kyoto in that approach. The Europeans certainly did at the time. And I'm not trying to criticize it, but rather answer your question, which is how would we get a different approach out of the U.S.? The answer is to come forward with a very concrete and specified way to implement common but differentiated responsibilities that seems fair to the Obama administration, but, perhaps even more importantly, that they feel would have some chance politically of being able to be sold on Capitol Hill, where there is an even tougher audience on this issue.

MS. SIERRA: Great. Well, we're coming close to the end, so before I sum up let me just ask the panelists if they have any final words. Heather?

MS. COLEMAN: I think we've actually covered a lot of it.

MS. SIERRA: Covered it, okay.

MS. COLEMAN: So I'm okay, but I'm really grateful for all of you for being here. It's clearly a very sophisticated crowd, so.

MS. SIERRA: Thank you. Michael, anything you want to close?

MR. KEEN: Well, yes. And whether I'm in the sophisticated crowd or not, but I've just -- (Laughter) maybe just a parting thought on this innovative finance aspect and that. I very much agree that of the kind of usual candidates of, you know, innovative instruments, for the purposes of climate finance, maritime and aviation fits the bill because, you know, its price is carbon. There's this kind of notion that the base belongs to the world in general rather than anyone in particular. But I sometimes worry, you know, if the issue was to come up with the public finance part of the 100 billion, sometimes I worry we get sidetracked into thinking you have to do that through an innovative source.

When we look at the fiscal problems countries have, in the U.S. or somewhere, we don't say, gee, we're not going to address this fiscal problem in the U.S. until they come up with an innovative tax instrument. We don't. We look for the most efficient way of raising the money. And I sometimes worry that the debate, the climate finance debate, may not be helpful necessarily to tie it up so closely with the innovative instruments even though, as you'll gather, you know, I'm a supporter of the maritime tax whatever use is made of the money.

MS. SIERRA: Nigel?

MR. PURVIS: Yeah, so two quick points. I'd love to respond to that.

The traditional source in the U.S. for assisting developing countries is called foreign aid. And if we think that we're going to have a dramatic increase in foreign aid in the next few years, you know, I think that that's highly unlikely. So this is the idea that we would enter into a long-term, predictable, affordable agreement with the maritime industries so that they had confidence about the contribution the world was asking them to make and they knew that they could deal with it and they could plan around it, and that we would use that process to generate some international finance. It may be innovative, but innovative in a good way. And so, you know, that --

MR. KEEN: (inaudible), yeah. (Laughter)

MR. PURVIS: No, I know you agree, so I just was wanting to share that political reality at least for the U.S.

I want to just emphasize that we are just getting into this analysis. This is not an area where we -- climate advisors or we at Brookings have done a huge amount of research. We have a draft paper in the back. We'd love to get comments from folks who are experts in this area. We want to deepen our understanding and want to improve our ability to serve the community by providing better and more complex and complete analysis. And so I very much hope that you'll follow up with Sam Grausz, who is the principal investigator. He's got his hand up there in the front row. We're very much interested in your feedback.

MS. SIERRA: Great. Keya.

MS. CHATTERJEE: Thank you so much for everybody's remarks. I thought this was actually a great conversation and lots of very interesting stuff from the audience. I just want to talk a little bit about the momentum in the IMO.

So we have dealt with NOx and SOx in the IMO without any particular negative economic impact. We got the Energy Efficiency Design Index through very, very recently. There's an incredible amount of momentum and a lot of people really acting proactively, putting ideas forward and moving on how you deal with climate change. And I think that that is really what gives me a lot of hope that all the players are really proactively engaging and putting forward ideas and talking about how you deal with climate change.

MS. SIERRA: Thank you. Well, let me try to just make a few remarks of my own.

One, I think what's interesting about this conversation among the many, many, many new items that we have on the climate field is precisely this nexus of a global problem with a global industry; a problem that has a new set of actors who maybe have not tread down the pathways that have gotten us into trouble in the past and so kind of looking at it in different ways; the IMO, different stakeholders like the Marshall Islands and others taking new kind of leaderships with coalitions; pretty good and deep analysis from the IMF, the World Bank, others that are trying to inform this. But let's not kid ourselves. You know, the same difficulties that we find in many of the areas where we're both looking at reducing emissions as well as raising finance: stakeholder concerns; the concerns about incidents, both short-term and long-term, of the different policies; the political framing in this country in a very difficult time period; and the difficult framing about utilization of the proceeds from a policy like this for developing countries in a time where there are many difficult fiscal concerns in this country as well as other developing countries.

But I'll also end on a little bit of the note of hope because I do think that the conversation is more open, more robust precisely because it doesn't have that long, long history of people having taken sides and not be willing to budge. So maybe there is some room for that.

We are at an interesting point. G-20 is meeting in June. We don't think this is, from what I understand from the panel, going to be the first thing on the agenda, but it is the kind of place where these conversations, because the ministers of finance, or several, are heavily involved, can move forward. Let's take it to Rio, G-8, and other venues as well.

Let me end by thanking our co-hosts -- Oxfam International, World Wildlife Fund, Action Aid, and their funders; we have Climate Connect here in the audience as well -- as well as our panelists -- Heather Coleman, Michael Keen, Nigel Purvis, and Keya Chatterjee -- for joining us this morning. Thank you very much.

(Applause)

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