April 17, 2020
Approval: 4/24/20

INTERNATIONAL MONETARY FUND

Minutes of Executive Board Meeting 19/18-1

9:30 a.m., March 18, 2019

1. Fiscal Policies for Implementing Paris Climate Strategies—From Principle to Practice

Documents: SM/19/39 and Correction 1; and Correction 2; and Correction 3; and Supplement 1

Staff: Keen, FAD; Parry, FAD; Davies, FAD

Length: 1 hour, 57 minutes

Executive Board Attendance

C. Lagarde, Chair

Executive Directors	Alternate Executive Directors
	K. Obiora (AE)
M. Raghani (AF)	
	J. Di Tata (AG)
N. Ray (AP)	
A. Tombini (BR)	
Z. Jin (CC)	
	P. Moreno (CE)
L. Levonian (CO)	
	C. Just (EC)
H. de Villeroché (FF)	
	K. Merk (GR)
S. Gokarn (IN)	
D. Fanizza (IT)	
M. Kaizuka (JA)	
J. Mojarrad (MD)	
H. Beblawi (MI)	
	R. Doornbosch (NE)
	J. Sigurgeirsson (NO)
	L. Palei (RU)
M. Mouminah (SA)	
	K.Tan (ST)
	P. Trabinski (SZ)
S. Riach (UK)	
	P. Pollard (US), Temporary

J. Lin, Secretary
J. Morco, Summing Up Officer
M. Gislen, Board Operations Officer
L. Nagy-Baker, Verbatim Reporting Officer

Also Present
European Central Bank: K. Nikolaou. Fiscal Affairs Department: M. Davies, I. Parry, M. Kenn. Alternate Executive Director: A. Guerra (CE), A. McKiernan (CO), F. Sylla (AF). Senior Advisors to Executive Directors: M. Choueiri (MI), N. Jost (NE), S. Keshava (SA), Z.Mohammed (BR), R. N'Sonde (AF), E. Rojas Ulo (AG), G. Vasishtha (CO), J.Weil (CO).

Advisors to Executive Directors: X. Cai (CC), K. Florestal (BR), U. Latu (ST), G. Nadali (MD), A. Nainda (AE), E. Ondo Bile (AF), I. Skrivere (NO), C. Wehrle (SZ).

1. FISCAL POLICIES FOR IMPLEMENTING PARIS CLIMATE STRATEGIES —FROM PRINCIPLE TO PRACTICE

Mr. Just and Mr. Mehmedi submitted the following statement:

The success of the 2015 Paris Agreement will depend on developing credible mechanisms for properly monitoring the Nationally Determined Contributions (NDCs) and their implementation as well as determining and agreeing on the most effective fiscal mitigation instruments. In this context, we welcome the staff paper on fiscal policies for implementing Paris Climate Strategies which we see as a useful tool for national policy makers and which contributes to the global debate on how best to tackle the effects of climate change.

Considering that climate change can be macro-critical, the Fund should play an important role in addressing the global climate challenge within the confines of its mandate and focus on key areas of its expertise. While the IMF is not an environmental organization, a point which should have been properly emphasized in the paper, we concur that the Fund should play an active role in assisting its membership address and mitigate the economic challenges posed by the adverse effects of climate change, including through fiscal instruments, especially given that mitigation policies have large fiscal and macro-financial implications. In this vein, we agree that providing analysis of and guidance on energy pricing and macro-fiscal policies as well as regulation consistent with countries' climate strategies submitted for the Paris Agreement is warranted and welcome staff's spreadsheet tool to help countries evaluate progress towards their Paris mitigation pledges and judge the adequacy of the mitigation policies. At the same time, the Fund should help its members build coherent macro frameworks for responding to climate change, which could improve prospects for attracting climate finance. We concur with staff's suggestions on the future analytical work to be conducted by the Fund, including case studies on carbon pricing/broader fiscal reform packages to address political economy challenges, and integrating mitigation policies into bilateral surveillance where macro-critical. However, staff's suggestion that the Fund should periodically take stock of the progress towards delivering on the Paris commitments should be carefully considered and only on a strictly voluntary basis, given the lack of expertise, the extension of this issue beyond the Fund's mandate, and the risk that the IMF could be perceived externally as a "monitoring institution/watchdog."

The Fund's role on climate change and natural disasters is largely covered by its traditional activities but there is a need to define how different workstreams on climate change will be incorporated into our surveillance activities. We therefore see merit in issuing a Staff Guidance Note on how to approach climate change in the Fund's surveillance, focusing in particular on adaptation policies, risk management and mitigation frameworks. We also think that climate and weather-related events increasingly need to feature in financial sector surveillance including stress-testing, in close collaboration with other relevant international bodies. In external communications, the IMF should realistically explain its approach to climate change issues and what it can and cannot do in this area given its mandate and limited resources and expertise. This in turn would help to temper the expectations of stakeholders and avoid reputational risk to the Fund. Given that the demand for support from the Fund on climate change issues, including on capacity development, program work, and surveillance will increase in coming years, entailing higher resource implications, we are wondering how the increase in demand will be accommodated within the existing resource envelope.

Carbon pricing could be part of broader climate mitigation efforts considering that it can be a practical extension of excise taxes, is easy to implement, and through its incentive effects, will help mobilize private finance for mitigation activities and spur the innovation needed to address climate challenges. It will be important that strategies for reducing emission should reflect countries' differing initial positions and political economy constraints. Nonetheless, it is essential that any carbon pricing is designed to suit national conditions and takes into account existing ETSs and other feasible fiscal instruments. The optimal mix of measures and the use of carbon pricing revenues will have to reflect political economy considerations as well as economic efficiency.

Addressing the political economy challenges in raising momentum for carbon pricing and meeting Paris commitments more generally will require a comprehensive, gradually phased, and well communicated strategy. This strategy should clearly specify the use of revenues and the planned measures to assist vulnerable groups and helping energy-intensive industries transition to the "new normal." Embedding carbon pricing as part of a broader reform of energy prices to comprehensively reflect the full range of environmental impacts, including local air pollution, is an essential component to increase political buy-in and garner broader public support. We believe that success in multilateral fora on establishing carbon price floor arrangements and their effectiveness will depend on whether the large-emitting countries join the carbon price floor arrangement and whether a broad-based agreement on how to track effective carbon prices is reached.

Small and developing states (SDSs) and low-income countries (LICs) face very large adaptation costs and diminished growth prospects, amplifying the need for scaling up climate finance and maximizing finance for development agendas. Climate change is asymmetric in its impacts as the effects will be substantial. Given that adapting to climate change can be costly, particularly in SDSs and LICs, it will be critical to mobilize and scale up adequate climate financing to ensure that financial resources from both bilateral and multilateral sources flow to developing countries to assist them in transitioning to a low-carbon economy. Considering that resilience building in these countries is hampered by significant capacity gaps, the Fund, in cooperation with the World Bank, should play an instrumental role in helping these countries building ex ante buffers (e.g., contingency funds, reduced debt) and ex post instruments (e.g., catastrophe bonds, regional insurance). Importantly, financing for resilience-building should be fully integrated into fiscal policy frameworks.

Mr. Sigurgeirsson and Ms. Skrivere submitted the following statement:

We commend staff for a very thorough and informative paper. Climate change is potentially macro-critical at the global, and in many cases national, level. The Fund, in collaboration with other international institutions, can help countries tackle this global challenge.

We believe that carbon pricing is often the most cost-efficient way of reducing emissions and, in doing so, meeting countries' pledges under the 2015 Paris Agreement. In accordance with national preferences and circumstances, other policies can be used as complementary measures. Given the urgency to tackle climate change and reduce emissions, it is of outmost importance that mitigation and adaptation are carried out through a cost-efficient policy mix.

It is important to consider distributional and equity aspects of tax policies, including environmental taxes. To gain acceptance for carbon pricing, costs and benefits should be made public, and it may be wise to introduce and/or raise it in a step-by-step approach starting at a low level. To address undesirable distributional effects for low and middle-income households, other measures may be needed. Time-limited exemptions for certain areas of use could also be considered in order to enable higher taxation in other sectors, thus achieving overall beneficial results for the economy. To reach public acceptance, it is essential to ensure that feasible alternatives to fossil fuels are made available for businesses and households. This could require targeted strategic incentives and investment in R&D.

While we do not favor a carbon price floor imposed at the international level, it could be an idea worth exploring among a group of willing countries. We are generally not in favor of internationally imposed requirements on domestic economies as countries have such different preferences. However, we believe that the way it is described in the staff paper, as a carbon price floor among willing (ideally large-emitting) countries, is an interesting idea that could bring momentum to the Paris pledges.

The IMF should stress the macro-criticality of urgent climate action and can play a useful role in helping analyze the effects of Paris mitigation pledges and how they can be reached in a timely and cost-effective way. The Fund should, where relevant, assist members in designing appropriate economic policies associated with integrating nationally determined contributions (NDCs) in the national budget and planning processes and steering towards low/net-zero emissions. The methodology set out in the paper can be a useful tool to take stock of and follow up on countries' progress in reaching their Paris commitments. Most likely the pledges will have to be strengthened over time, which will have to be taken into account in the analysis. To create aligned incentives for financial market actors, where relevant, climate risks should be integrated into the general risk management framework and financial market supervision. Further, stress testing for climate risks (for example, in the Financial Sector Assessment Program) is an important area.

Collaboration with other actors, such as the World Bank Group and the United Nations, is key to ensure efficiency and effectiveness based on each institution's core mandate. Climate change will have a severe macro-economic effect on vulnerable countries and this will have to be reflected in the recommendations given by the Fund. Support to quantify the economic risks in vulnerable countries is also an important task. Carbon taxation can be implemented in a way that gives rise to low administrative costs for both authorities and operators. Further, it could serve as a much-needed domestic resource mobilization.

Low-income countries (LICs) need to balance ensuring sustainable economic growth and reducing reliance on fossil fuels. LICs usually have lower emissions per capita than developed countries but need to both ensure sustainable economic growth and embark on a path towards an economy that is not relying on fossil fuels. That needs to happen in parallel with securing and increasing access to sustainable energy.

Mr. Agung, Mr. Shaari and Ms. Latu submitted the following statement:

We thank staff for the extensive analytical work on this important topic. Given the macroeconomic consequences of climate change, which could be macro-critical to a country's medium and long-term economic sustainability, we agree that the Fund can play a key role in helping the membership to build resilience to the impacts of climate change, while remaining within its mandate and in close collaboration with other international organizations. We support the general approach taken by staff to integrate climate considerations into the Fund's macro-fiscal policy advice and offer the following remarks for emphasis.

The design and application of carbon pricing and other mitigation instruments should be tailored to reflect national circumstances. The appropriate mitigation strategy will depend on factors such as the nature of NDC pledges, their economic structure, and their domestic capacity, all of which vary significantly across countries. In this regard, the Fund can make valuable contributions by providing analysis and policy advice that take into account national political economy and economic efficiency, and that are tailored to local conditions and institutional capacity. Where applicable, the Fund can also play a key role by providing technical assistance to members to build climate resilience into their macro-fiscal and financial frameworks that are in line with the country's climate strategies.

Low-income countries and small states are particularly susceptible to not just the physical risks of climate change, but also significant transition risks given their weaker absorptive capacity and limited fiscal space. Considering the substantial challenges facing these countries, it is crucial for the Fund to focus on the development of cost-effective adaptation policies that are complementary to the use of mitigation tools to support resilience building without compromising macro-fiscal sustainability. To better address the needs of vulnerable countries, we also support the emphasis on economic opportunities from green and climate-resilient economies as set out in the staff report.

There is a need for further careful analysis of a carbon price floor to better inform the ongoing debate at the international level. Staff has rightly noted that carbon pricing has different implications on countries given national circumstances. Given political economy constraints, we agree with staff that further work to identify accompanying measures to address sensitivities and a better understanding of the trade-offs with other mitigation instruments would be a prerequisite to a common minimum price that is meaningful and within the reach of all countries. Against this backdrop, a gradual and proportionate approach with the large-emitting countries taking the lead can be a step in the right direction.

Countries' mitigation and adaption strategies can be macro-relevant in the Fund's bilateral surveillance. We see merit to better understand and incorporate the macroeconomic (and particularly fiscal) impact of mitigation and adaptation strategies into the Fund's analytical toolkit to the extent that these affect its core mandate. To enhance traction and impact of the Fund's policy advice, the policy discussions should be risk-based, tailored to country priorities and focused on the most pertinent risks, including climate considerations where relevant, for each country. To this end, attention should be given to coordination with ongoing work such as the comprehensive surveillance review, with particular emphasis on the identified priorities of ensuring sustainability and proffering integrated policy advice, as well as the Fund's efforts to build ex-ante resilience in countries that are vulnerable to natural disasters.

The Fund should make use of its comparative advantages in analytical expertise and macroeconomic perspective to collaborate with other international organizations in its efforts to reflect deeper analysis of climate considerations in its surveillance activities. The scale of the challenges calls for the joint efforts of various international organizations, with each having their own expertise and work scope. Constructive dialogue and a clearer delineation of roles based on the relative mandates of the Fund and other international organizations can help translate the Fund's policy work on the macro and fiscal implications of countries' climate strategies into concrete outcomes and tangible benefits for the membership.

Mr. Moreno submitted the following statement:

The staff's paper provides a useful and welcomed contribution to the Paris Agreement. Fiscal policies are called to play a key role in climate change strategies, and the paper provides a useful contribution on the best practices and implementation challenges of fiscal policies and their contribution to the Paris Agreement objectives. We welcome Fund's involvement in these objectives through its surveillance and analytical functions and by raising awareness of the importance of the global challenge of climate change.

We share staff's assessment on the efficiency of carbon pricing. Carbon pricing has proven to be a cost-effective approach to addressing climate change by mobilizing revenues, shifting incentives for investment and consumption, and catalyzing innovation in clean technologies. It helps to shift the burden of the damages associated with climate change back to those who are responsible for and can reduce it, and it plays a critical role in mitigating greenhouse gas emissions (GHG). Carbon pricing is also gaining momentum as the countries that have delivered their Nationally Determined Contributions (NDCs) to the Paris agreement (88 countries representing 56 percent of global GHG emissions) have already stated that they are planning or considering the use of carbon pricing as a tool to meet their commitments.

This said, its implementation should be country-specific, inclusive and well communicated. Any carbon pricing instrument must be designed from an inclusive perspective and address concerns related to undesired social effects to ensure a so-called “just transition.” This is even more the case in low-income and low-emitting countries where, as highlighted by staff, carbon pricing is less urgent. It should also be stressed that, while the main objective of carbon pricing initiatives is to stimulate cost-effective emissions mitigation, they can also help achieve broader environmental and social objectives. In this respect, effective communication is key to embrace the aim and highlight the side-effect benefits of carbon pricing, particularly if obtained revenues are appropriately recycled into social and environmental policies.

Furthermore, it should be framed within a wider set of instruments to reduce carbon emissions. Carbon pricing is a powerful market-based instrument, but the menu of mitigation instruments is wider, including regulations and feebates, which can complement carbon pricing policies contributing to reach the shared aim of substantially decreasing GHG emissions. In this sense, there are regulatory tools under development that can be used as a valuable benchmark to anticipate how carbon pricing policies can strengthen market signals and they should be further explored before setting carbon-pricing floors/caps.

The IMF has a role to play on climate change issues in close cooperation with multilateral partners. Staff makes a good case of climate change being potentially macro-critical. Additionally, we would not only highlight macro-criticality for specific countries that most directly suffer the impact of climate change, but also the importance of spillover effects from the biggest polluters. In this respect, we support the proposed focus of this report on Fund’s advice on best practices, impact analysis, and capacity building on the design of fiscal policies steered to climate change objectives. We would also highlight the importance of the IMF increasing awareness of the global climate change challenge through its multilateral surveillance and in its flagship reports, which can also benefit from the spreadsheet model developed by staff (such as in the useful figures 3, 4 and table 4 of the report). The Fund's efforts should be closely coordinated with third institutions to avoid duplications. In this respect, we would welcome staff's comments on how the carbon-pricing initiative inserts into the World Banks's initiatives, including the Carbon Pricing Leadership Coalition (CPLC), and the Partnership for Market Readiness (PMR).

Together with fiscal policies, we would also highlight the scope for Fund's involvement in green finance. The finance industry has an important responsibility in the climate change challenge and is already showing an interest on it, including the increasing attraction of green bonds and some incipient evidence of positive discrimination in favor of companies with the least exposure to climate change. Regulators are also strengthening their surveillance instruments to include climate change considerations (such as in risk models or stress-testing), an effort that is also coordinated through the Network for Greening the Financial Sector (NGFS) of supervisors and central banks. Climate finance also offers an opportunity to support LICs, where mitigation policies are conditional upon finance and international support. The Fund's expertise on the financial sector warrants its involvement in these issues along the same lines of best practices, impact analysis, and capacity building.

Mr. Gokarn submitted the following statement:

We thank staff for an excellent paper on the fiscal policy dimensions of the Paris accord and for their very useful outreach. Our comments address each of the issues raised for discussion.

Carbon pricing will certainly play a role in meeting the pledges. However, the appetite for imposing a price will vary across countries, based on a range of attributes. Energy access, security and, most importantly, affordability will be a critical consideration. In comparing carbon pricing with other mitigating measures, efficiency considerations will certainly be traded off against distributional ones; the price which any country will be willing to impose will be determined by this trade-off. The paper does a very good job of comparing carbon pricing with other measures. Assuming the robustness of the modeling exercise, this will prove to be a useful input into country considerations. Could staff comment on key limitations of the modeling exercise?

We believe that each country will have to find a combination of instruments, which will balance efficiency and equity considerations. Carbon pricing will be a part of this combination and may require rationalization of pricing formulas across energy sources. However, other incentives and disincentives and a framework of transfer payments will also enter the policy mix in many countries. In this regard, the Fund's macroeconomic analysis will have an important role to play in assessing the monetary, fiscal, balance of payments and financial sector implications of alternative policy mixes. This is a role that is mentioned in the paper. Could staff comment on whether the modeling capability as it now stands can effectively address this requirement?

Based on the reasoning provided in paragraph 1, our view is that a floor consistent with the objectives of the accord is unlikely to be universally acceptable, since its distributional impacts in many economies will be significant. A system of international transfers may help offset some of these impacts, but there are visible problems with implementing one. The country simulations reported in the paper point to wide differences in the relative impact of carbon pricing on GHG emissions across countries. They also point to differences in the relative impact of alternative mitigation instruments within countries. Both these patterns suggest that country strategies could vary considerably. It might be a useful exercise to group countries in terms of these two attributes, generating "strategic clusters" of countries across regions. Could staff comment?

We believe that it is premature for the Fund to standardize discussions on these issues. It should really be up to countries to engage with the Fund on these issues and for them to decide on the appropriate mode of engagement. The Fund should certainly disseminate the work being done and the results emerging from it. This should encourage countries to take advantage of the Fund's capabilities in assessing the macroeconomic implications of alternative policy approaches. The strategic clustering suggested in paragraph 3 may be a useful step in this direction, with the results of an exercise done for individual countries could serve as a demonstration for other countries within a cluster.

In our view, LICs and Small States would logically form distinct strategic clusters. The characterization of LICs in terms of fiscal and institutional capacity would perhaps constrain their choices in terms of both the level of carbon pricing and effective implementation of other measures. However, this does not necessarily change the Fund's role in assessing the macroeconomic impact of different policy mixes. Other agencies may be better equipped to suggest appropriate mixes taking into account national conditions. So, there should be greater emphasis on collaborative approaches, such as in the FSAP, where development and stability aspects of the financial sector are given equal emphasis. In the climate change mitigation domain, this approach should lead to a set of realistic and feasible policy mixes, combined with macroeconomic assessments of each one.

The Fund should be careful to draw boundaries between its macroeconomic assessment role and a potential role as a monitor of countries' progress. The way the issue is framed seems to suggest the possibility of a broader role. Could staff clarify what is meant by "taking stock" in this context? If the narrower role is what is envisaged, we would see that as being reasonable, but would like to see a template of what the report would look like.

As indicated in paragraph 5, we think it is very important for the Fund to enable small states in dealing with vulnerabilities. While the majority of this group are island states, the landlocked ones also face significant climate change vulnerabilities. However, the island states constitute a distinct strategic cluster, in this as well as other domains and a generalized approach to them is welcome. In this regard, the CCPA is a promising initiative and look forward to updates on the traction that policy recommendations are getting in the first set of countries that have gone through the exercise. A second issue with respect to this particular cluster is to look for financially sustainable collective insurance solutions, which could significantly improve the capacity of these countries to deal with natural disasters. There are some such initiatives already in place to deal with other kinds of risks and these could be explored.

Finally, we would like to raise an issue which the paper does not really address. Global market power in both technologies and products will have an important bearing on the costs and implementation of mitigation approaches. For example, the Kigali amendment to the Montreal Protocol, referred to in the paper, phases out HFCs but requires the use of substitutes for which the intellectual property is owned by just a few companies. In equipment such as photovoltaic cells, the viability of solar energy projects is impacted by monopoly power exercised by producers. The Fund is doing excellent work in highlighting the consequences of global market power in various domains. To the extent that it has a bearing on this issue, it should be taken into account in the analytical approaches.

Mr. Raghani and Mr. Sylla submitted the following statement:

We thank staff for their comprehensive paper and welcome the Board discussion on fiscal policies for implementing Paris climate strategies.

The Fund's increased interest in climate change issues is welcome, as the economies and populations of all countries are affected regardless of their level of development. The scale of the potential adverse effects of climate change on mankind represents the greatest threat to the planet if mitigation and adaptation measures are not taken. Therefore, we commend the 190 countries that have presented climate strategies with a view to reduce greenhouse gas emissions and build resilience to climate change. In this respect, it is necessary for countries to design and implement appropriate policies, in particular on the fiscal front, to finance their climate strategies. It is also equally important to encourage a supportive involvement of the Fund given its expertise on fiscal related issues, and the potential macro-criticality of climate change.

Carbon pricing could play an important role in achieving the objectives of country climate strategies. Under their climate strategies, we note that countries aim at substantially reducing the emissions of carbon dioxide and other greenhouse gas emissions in order to meet the objectives of the 2015 Paris Agreement. The focus being on fossil fuel CO2 emission, we agree that carbon pricing would be appropriate notably in countries with high fossil fuel consumption. To be effective, we also agree that it should be well designed, comprehensive and take into account countries' circumstances, notably with regard to low income countries. Moreover, given the impact on energy prices, there will be a need to accompany carbon pricing with a substantial information campaign on the use of revenue stemming from its implementation. In advanced economies, besides carbon pricing, increased financial efforts in research and development for clean technologies could also be an important tool for reducing carbon dioxide and other greenhouse gas emissions.

Establishing a carbon floor at the international level should be explored to further enhance countries' commitment to mitigate climate change while guarantying a minimum level of effort. However, countries' participation should be on a voluntary basis and reflect their peculiar circumstances that need to be taken into consideration to preserve their international competitiveness. Staff's elaboration on setting a common floor price and on how to ensure flexibility under countries' mitigation pledges would be appreciated. At the same time, we would also appreciate comments on how the carbon tax and the Emission Trading System (ETS) could complement each other, particularly in regions that already have a working ETS. In addition, we call on the United Nations Agencies for international transportation to step up their efforts in achieving their mitigation objectives through a steady implementation of appropriate action plans involving all member countries.

With regard to adaptation strategies, we agree that successful implementation requires bold actions to strengthen countries' resilience and reduce their vulnerabilities to climate change effects. In view of the financial costs of adaptation efforts notably for low-income countries, we encourage advanced economies to remain committed to mobilize US$ 100 billion a year from 2020 to support developing economies in their endeavors to implement their mitigation and adaptation strategies.

Although climate change presents risks and opportunities for the financial sector, there is undoubtedly a role for financial institutions in the path to low-carbon economy. Carbon prices can directly impact the financial positions of these institutions' clients, making climate risk an important element of any credit decision. Notwithstanding, there are also significant opportunities for financial institutions to provide innovative financing products for renewable power generation, green buildings, green transport, as well as climate-smart assets such as green bonds. We, therefore, share the view that carbon pricing can provide a solid signal to help drive private sector finance. This should be supplemented by efforts to (i) improve financial system information; (ii) integrate environmental factors into oversight and supervision; and (iii) refine legal framework with respect to long-term risks, as rightly noted by staff.

We call on the Fund for an adequate involvement in building institutional and human capacities of developing countries. This will help mobilize official and private financing towards well designed public investment plans and effective fiscal institutions.

Low-income countries being highly vulnerable to climate change and natural disasters, we see the Fund playing a key role in providing needed support to strengthen these countries' fiscal policies as well as their fiscal institutions. This will lead not only to increasing fiscal revenue but also to better public investment planning. The Fund's assistance will also help countries to assess the fiscal impact of their mitigation and adaptation strategies to climate change. In doing so, advice on macroeconomic and fiscal policy framework consistent with climate considerations, without forgetting those workers and communities affected by the shifts to low-carbon economy, will be essential.

Finally, we are also of the view that the Fund could assess on a regular basis, the progress made by countries in the macro-fiscal front to achieve their climate strategies under the Paris Agreement. Integrating this assessment into bilateral surveillance will help to further strengthen countries' macro-fiscal frameworks.

Ms. Levonian, Ms. McKiernan and Mr. Sylvester submitted the following statement:

We fully support the Fund's continued engagement in helping its members to tackle global climate change within the context of promoting robust, sustained, and inclusive growth. We believe that climate change is beyond potentially macro-critical, especially for small developing states (SDSs), who are already grappling with sea level rise and the increasing frequency and severity of natural disasters. Given its expertise, universal membership, and close relationship with key policymakers, the Fund is appropriately placed to support the advancement of mitigation and adaptation policies. Against this backdrop, we thank staff for this useful paper, which seeks to translate guiding principles into more concrete actions.

We wish to make the following observations regarding the discussion issues raised in the paper.

We see merit in carbon pricing, as well as other mitigation instruments in meeting countries' Paris pledges. As staff notes, carbon pricing can deliver CO2, fiscal, environmental, and economic benefits. However, carbon pricing should be complemented by other mitigation instruments, such as regulations, as a menu of policy options. Accordingly, we believe that greater analytical clarity of the macro and fiscal implications regarding the full range of mitigation instruments could help move mitigation policies forward, including overcoming political hurdles. In this regard, we concur with staff that having transparent, quantitative frameworks for projecting emissions for nationally determined contributions (NDCs) and for assessing environment, fiscal, and economic impacts of carbon pricing and alternative options will support scaling up of national efforts. Furthermore, consistent, cross-country procedures for evaluating mitigation pledges and their implicit prices could inform international dialogue on recalibrating climate commitments in periodic reviews

International cooperation on climate change is fundamental. Regarding staff's suggestion of a carbon price floor at the international level, we agree that this may be a useful approach, but we are unsure about the spillover effects on SDSs and low-income countries (LICs) or how the process towards an international carbon price floor among willing countries would likely unfold. Further analytical work on spillovers could help support the argument for an international price floor. More broadly, cooperation among multilateral organizations in the climate change space is important. This will prevent duplication of efforts and ensure that institutions leverage their competence while ensuring mutually reinforcing interventions, such as the existing collaboration between the Fund and the World Bank on climate change policy assessments (CCPAs).

It is important that the Fund engage on climate change in the domains of its expertise. We believe that the Fund has a comparative advantage in assessing the macro and fiscal implications of climate commitments. In this context, we strongly support the integration of climate policy into Fund's surveillance, as well as in other business lines, such as lending and capacity development. We note positively that this can be done at low resource cost. Regarding an annual stocktaking exercise to assess progress on Paris commitments, however, we wonder whether the Fund is best positioned to undertake this role relative to other organizations, such as the United Nations Framework Convention on Climate Change (UNFCCC). We would welcome staff's comments on this.

We believe there is some scope for advancing mitigation policies within LICs. For example, there is merit in reflecting the true cost of fossil fuels to facilitate the promotion of cleaner and more environmentally-friendly energy alternatives in small states and LICs. However, these countries are generally small emitters and are also handicapped in transitioning from fossil fuels to renewable sources of energy due to significant technical, financial, and political economy constraints. In this regard, policy advice on mitigation instruments should take into account country circumstances, including the likely impact of these policies on economic and poverty outcomes.

Finally, a holistic approach is needed to promote resilience in countries vulnerable to natural disasters and climate change. Understandably, the paper is light on adaptation approaches, given that its main focus is on mitigation strategies, which undoubtedly is critical and, as we established earlier, the Fund has a leading role in promoting mitigation. That said, climate change adaptation is particularly relevant for promoting ex-ante resilience in small states that are at enhanced risk to natural disasters and climate change impacts. In this regard, we welcome the recent efforts by the Fund in helping many of its members, particularly small states, to build integrated resilience frameworks. Access to predictable and affordable financing for adaptation, in particular, is key to building resilience in these vulnerable states, and they are looking towards the Fund for support in unlocking climate financing. Further support in terms of financial analysis, policy advice, and capacity building will also be critical going forward. We trust that the upcoming board paper on building resilience in countries vulnerable to natural disasters will provide valuable insights in these areas.

Mr. de Villeroché, Mr. Fanizza, Ms. Riach, Mr. Doornbosch and Mr. Obiora submitted the following joint statement:

We welcome staff's excellent paper, which provides an important contribution to an economically effective implementation of the climate strategies submitted for the Paris Agreement. The paper clearly shows the central role of macro-fiscal policies and proposes country-specific strategies for mitigation and adaption and how the Fund can add value. We therefore strongly support staff's proposals to integrate climate policy and the implementation of Paris mitigation pledges in bilateral and multilateral surveillance.

Climate change is macro-critical for the entire membership, warranting a strong engagement of the Fund on this issue. The tangible effects of human induced climate change are becoming increasingly clear. Although there is still a large range of uncertainty around the economic impact of possible warming scenarios, there is a consensus that this impact will be significant and will affect all countries. Many areas which are at the core of the Fund's mandate will be affected, including GDP growth rate and its composition, trade, financial stability, employment, inequality and migration. While the severity and timing of these impacts will vary by country, the strong spillover effects of climate change and its global nature means that the whole membership is already or will be affected in a foreseeable future. Moreover, as mitigation policies can only be effective if implemented on a global level and through multilateral cooperation, the Fund is particularly well-placed to engage on this issue. We therefore view that designing and integrating climate-related policies in fiscal frameworks is important. The paper demonstrates, the ambitious mitigation pledges of the 190 countries in the 2015 Paris Agreement will have a macro-critical impact on the economy and fiscal policies of the signatory countries. Through its quasi universal membership and its fields of expertise, the Fund is uniquely-placed to monitor the transition toward a low carbon economy and to help countries design the most economically-effective and socially acceptable policies to implement this transition.

The analytical tools presented in the paper can help policymakers to judge the adequacy of the mitigation policies they have implemented or are planning to implement against their climate commitments. We welcome the analysis of country-level mitigation policies. We note that many mitigation pledges imply substantial emissions reductions, exceeding 30 percent of CO_2-emissions below business-as-usual levels in 2030 in a number of countries. The analysis of the effects of carbon pricing is insightful and shows significant dispersion in carbon prices implicit in individual country pledges.

While we agree with staff that carbon pricing is an efficient and direct way to curb carbon emissions, other instruments – such as regulation or climate finance – also have significant potential mitigation benefits, and the full range of pricing and non-pricing instruments should be further explored. The analysis of alternative mitigation instruments adds value to the debate and shows that such measures can be complementary. The optimal mix of measures and the use of carbon pricing revenues must reflect political economy considerations as well as economic efficiency. We therefore encourage staff to build further analytical tools to better capture and assess the variety of existing options. Mitigation policies should also be fully embedded in the Fund's analytical toolkit, notably to take account of countries implementing mitigation policies without relying on carbon pricing and ETS policies. This is especially the case in developing and emerging countries where the climate finance and maximizing finance for development agendas are critical to pave the way to energy transition and carbon emission mitigation. As underlined by staff, those countries may have limited capacity to design and enforce a carbon pricing policy but can have energy efficiency and renewable energy policies supported by development partners. These policies are also critical for implementing their national commitments under the Paris agreement. Could staff indicate how the analytical framework laid out in Appendix 3 will be able to value the efforts made by developing and emerging countries towards energy transition, beyond the emphasis put on carbon pricing and ETS?

Moreover, at this stage, under the spreadsheet model set up by staff, GDP growth is exogenous to mitigation policies. As such, this analytical framework doesn't capture the direct and indirect spillovers resulting from mitigation policies on economic growth and employment whereas these spillovers can be positive and macro-critical. This may be the case when energy transition and mitigation policies are implemented in countries highly dependent on hydrocarbon imports. In this context, a General Equilibrium modeling can be seen as an appropriate tool to address the trade-offs and spillovers which are critical in the decision-making process. Could staff indicate how further refinement of the analytical framework laid out in Appendix 3 could incorporate the mitigation policies' endogenous effects on economic growth and job creation or whether another model could be used to take these issues into consideration?

We strongly highlight the importance of measuring the distributional impact of the proposed tools to ensure the acceptability and therefore the durability of the recommended strategies. For instance, we concur that using carbon pricing revenues to reduce distortionary taxes is the most appropriate instrument from a pure efficiency point of view, as shown in Box 1, but political considerations may call for a broader strategy depending on domestic circumstances. While carbon taxes may be an avenue to generate much-needed domestic revenue, it is important to note that the poor tend to allocate a greater share of their consumption to carbon emitting products when compared to wealthier households. Thus, it is critical that these factors are considered when applying carbon pricing to avoid being regressive. The adverse income effects of mitigation policies may notably warrant compensation to disproportionally affected and vulnerable groups. While the analytical arguments of the paper help inform policymakers of potential efficiency-equity trade-offs, staff could develop more granular tools to assess the distributional impact of mitigation policies and recommendations guidelines could be designed to guide staff work in this area.

We welcome the analysis of an international carbon price floors and carbon taxation of international transport fuels. We agree with staff that carbon price floor arrangements could reinforce mitigation commitments by guaranteeing a minimum effort among participants and addressing the divergence in carbon prices implied in current commitments. The Fund is well-placed to contribute to the discussion on international-level mitigation through analyses and policy advice about the effects of different carbon price floors and carbon taxes of international transport fuels. In recognition of disparities across countries, we call for a careful calibration when proposing an international price floor. While imposing a minimum international carbon price would represent a clear signal and strengthen mitigation efforts across the board, there is need to carefully consider disparities across countries. Given that dispersion in emission varies significantly across countries, it may be a challenge to convince signatories to the Agreement to settle for a minimum carbon price floor arrangement. Despite the fact that carbon taxes may be an avenue to generate much-needed domestic revenue in developing countries, it is important to note that the poor tend to allocate a greater share of their consumption to electricity when compared to wealthier households. Thus, it is critical that these factors are considered to avoid applying regressive carbon pricing floors. In this context we wonder whether the effect of a price floor can be calibrated through border carbon adjustments (BCAs), which have been endorsed for this reason by over 3000 US economists[1]. Staff's comments are welcome, as staff suggests that BCAs have limited effectiveness.

Considering high costs and long term negative impact of climate change and natural disasters, incorporating ex-ante resilience building in individual country macro-fiscal and financial frameworks would be a good step forward. In addition, country resilience strategies, developed with the help of the Fund should think about how countries can integrate disaster and climate change resilience into the evaluation of, not only fiscal policies, but all policy decisions, including on energy, agriculture, health, taxation, transportation, and so on. In the environment of limited availability of fiscal space, special attention needs to be dedicated to small states. At the same time, the Fund should develop a strategy to integrate disaster and climate change resilience into each of its core business lines: surveillance, capacity development, and lending. Lastly, building fiscal buffers through revenue mobilization and work towards an optimal mix of financial instruments to minimize the cost of building resilience is crucial to enable a country to deal with unforeseen natural disasters.

Vulnerabilities to climate change varies considerably across region, with greater risks for developing and low-income countries who are mostly low emitters. There is need for the Fund to liaise with other IFI's like the World Bank to explore financing options for LICs without placing unduly debt burdens on LIDCs. Public sector budgets in these countries are already under tremendous pressure with limited buffers. Integrating climate adaptation strategies will require additional resources for infrastructure development needed in response to climate change challenges.

We strongly support the integration of climate policy into the Fund's surveillance. The adaptation of economic policies will be essential to help members design the right policies to deliver on their Paris pledges and we therefore see a clear role for the Fund. Developing the right fiscal and tax instruments is a complex task, and staff could usefully advise the membership in a more coherent and systematic manner, while taking fully into consideration the specificities of the concerned member. In this light, we support staff's proposals in paragraphs 63 and 64. Article IV reports can be used to provide country-specific advice on fiscal, environmental and

[1] https://www.clcouncil.org/economists-statement/

economic impacts of mitigation policies and to assess reform options, while an annual multilateral stocktaking exercise can assess progress towards the Paris commitments and the policy efforts needed to meet Paris pledges. Climate change also poses risks to the financial sector, as outlined in Box 2. We appreciate the Fund's contribution to the activities of the Network on Greening the Financial Sector and encourage staff to include financial risks of climate change in its financial surveillance. More broadly we think it could be beneficial to tackle climate change as an interdepartmental issue. Finally, staff should stand ready to offer technical assistance to the member countries as demand may increase in the coming years.

Mr. Mouminah, Mr. Alkhareif and Mr. Keshava submitted the following statement:

We thank staff for their paper and for their outreach. We would like to make a few general comments followed by specific comments on issues for discussion.

General Comments

We consider that the basis of the Paris Agreement was an intent to strengthen global action on climate change without sacrificing sustainable development and poverty reduction. The agreement addresses all sectors, including energy generation and use, transport, buildings, industry, agriculture, forestry and other land use, and waste management. Thus, the focus should be on reducing emissions from all sectors rather than undermining energy sources, such as fossil fuels. In addition, the agreement recognizes common but differentiated responsibilities based on each nation's respective capabilities; and avoiding of a one-size-fits-all, top-down framework based on each country's unique context. In this connection, we find an undue emphasis on energy and particularly oil, including in the staff paper, with efforts to impose excessive and unrealistic taxes on hydrocarbon fuels and a transfer of the financial burden to developing countries, many of which still suffer from energy poverty.

While the paper suggests the need for immediate and rapid transitions to low-emissions economies, we are of the view that orderly transitions will require time, thereby underlining the need for making ample and reliable energy supplies available for the long transition. Indeed, to meet both environmental targets and development goals, the global economy will require investment in all energy sources, and that means not discouraging or curtailing needed investments in proven energy sources.

Specific Comments

We do not consider carbon pricing as an effective policy tool in meeting the Paris pledges in many countries. As noted in paragraph 16 of the paper, existing taxes often amount to substantial carbon prices. The suggestion to impose further carbon taxes will make the situation even more regressive since the burden of high energy prices falls disproportionately on poorer segments of the population, raising serious political economy issues. The lack of broader interest in carbon taxes among member countries is also evident as only 16 national governments had introduced such taxes as of 2018 and that too with only partial coverage in some countries (paragraph 13). We also take note in paragraph 34 and Figure 4 that for countries where coal use is minimal or zero, carbon prices need to be excessively high, which will not be feasible to implement. We also see practical implementation issues with internationalizing national carbon prices, let alone harmonizing national with regional prices. Based on our views on carbon pricing in general, we do not see merit in the suggestion for a carbon price floor at the international level. Carbon pricing is also prejudiced against resource-rich countries, making an agreement on carbon price even more difficult.

Instead of carbon taxes, we would suggest other approaches to meet countries' Paris pledges, which may include one or more market and non-market measures such as local pollution standards and regulations that can also generate CO2 reduction benefits because of complementarities. Feebate programs could be an effective way to limit emissions from transport. These however work best if the program is designed in such a way that rebates are equivalent to surcharges. In addition, we need to make large investment in new energy and efficiency technologies as well as to encourage international collaboration to find both technological and policy solutions to the challenges. By lightening the environmental footprint of conventional fuels, which continue to drive global economic development and social prosperity, Carbon Capture, Utilization, and Storage (CCUS) represents a necessary component in meeting the climate change objectives while making prudent use of the earth's fossil fuel endowment and sustaining economic growth and prosperity.

It is for each country to determine how it pursues domestic public policy to meet mitigation pledges considering the short and long-term trade-offs they perceive between national development priorities and budget constraints. Unless it is explicitly requested, such discussions with the national authorities in bilateral policy discussions should not feature. In addition, when requested, Fund advice to countries should include a menu of options and the Fund should be willing to support second best solutions instead of insisting on the best one. This is particularly relevant with regard to Fund advice on climate change where the focus is on carbon taxation instead of offering countries a menu of options, including renewables and regulations for energy efficiency.

Since low-income developing countries are not responsible for historical accumulations and are only marginal contributors to the flows, it is not appropriate to transfer the burden of mitigation on these countries. Mitigation is not costless and can prove unaffordable, especially for low-income developing countries facing resource constraints. They will need external support. In this context we refer to Article 9 of the Paris Agreement, which asks developed countries to provide financial resources to assist developing countries with respect to both mitigation and adaptation, setting a collective quantifiable goal.

The methodologies set out in the paper can be useful, but the role of the Fund in the labor and time intensive stock taking exercise, in our view, is limited. Other international institutions with more experience are better placed to do this work. In this regard, we would appreciate if staff could clarify what is meant by the indication in the Issues for Discussion that "the Fund could usefully take stock of countries' progress on their Paris commitments"?

Finally, the Fund does not have comparative advantage in promoting resilience and institutions such as the World Bank, heavily engaged in these efforts, should lead the process. The Fund, however, has an important role to play in helping strengthen fiscal buffers to manage climate-related shocks.

Mr. Kaizuka, Mr. Ozaki and Mr. Naruse submitted the following statement:

We welcome this opportunity to discuss the practical policy implementation issues for meeting Paris commitments, as climate change is a relevant and macro critical issue for the membership. We appreciate that the staff's report could provide the implications of fiscal policy consistent with the membership's climate strategies submitted for the Paris Agreement. Also, we positively note that staff try to discuss the role of fiscal policies in a balanced way by identifying benefits and challenges. These analysis in the paper would be valuable inputs for the future consideration of the authorities.

Under the Paris Agreement, the parties are required to report progress on implementing Nationally Determined Contributions (NDCs) every two years and to submit revised pledges every five years. To help the membership design and implement the appropriate policies to fulfill their national commitments under the Paris Agreement, we believe that it is critical to have systemic and collaborative scheme under the COP assigning relevant roles among related international organizations, including IMF, WB, UN and others. In other words, it would be beneficial for both member countries and related organizations to facilitate implementation of the NDC if we could see the whole picture clearly mapping out which international organization could have a role to work on what areas. This would also be useful for the IMF to avoid any duplications of work with other international organizations and ensure its legitimacy of its engagement to the work.

As for the role of the IMF, we believe that the IMF could have a pivotal role to play in analyzing the macroeconomic impacts of various policies to meet climate commitments, as illustrated in the paper on the table. Also, if a member country decides to introduce some mitigating fiscal measures, the FAD could give a valuable advice for smooth implementation by taking stock on the other countries' experiences. If a member country needs to strengthen financial sector policies as outlined in Box 2 to contain financial risks of climate change, the MCM could also come into play. In this light, we totally agree with Mr. de Villeroché, Mr. Fanizza, Ms. Riach, Mr. Doornbosch, and Mr. Obiora's view that it could be beneficial to tackle climate change as an interdepartmental issue. We put emphasis on the importance of having a Fund-wide approach to the issue to have a better synergy in our existing resource envelope.

We would like to emphasize that each country should have its own discretion to determine its policy tools to meet its own climate commitments, based on the consideration of various aspects, such as macro economy, energy security, the promotion of utilizing other energy sources, and political economy. In this light, we concur with Mr. de Villeroché and other colleagues' view that the optimal mix of measures must reflect political economy considerations as well as economic efficiency.

While staff suggest that the IMF's bilateral surveillance could integrate "standardized analyses" of mitigation policies, we encourage the IMF to take a cautious approach to avoid one-size-fits-all and uniform approach. In this regard, while we note that the IMF analyzes and compares the effectiveness of mitigation instruments to conclude that carbon tax is the most effective one from a macroeconomic perspective, in order to make the Fund's advice more valid, it would be better to consider country-specific circumstance and not regard the use of carbon tax as the only or best way to achieve mitigation objectives. We also think that external communication on this paper should be done in a careful manner so that there should not be any misunderstanding of the message.

Lastly, staff say that carbon tax is more effective and raise more revenue than other instruments. At the same time, staff also say that targeted measures, such as providing rebates and transferring benefits, are needed to compensate vulnerable households, workers, and firms. We wonder if even taking into consideration these additional expenses, carbon tax could have a most desirable effect on the country's fiscal position. We would welcome the staff's comment.

Mr. Trabinski and Ms. Wehrle submitted the following statement:

The paper provided by staff is very useful in analyzing the different policy options available to members to follow through with their Paris mitigation contributions and to help climate-vulnerable countries devise effective adaptation plans. The Fund has a great role to play in supporting members on how to design, adjust or improve their fiscal framework, revenue mobilization and redistribution mechanisms to accommodate the NDC in an economically efficient and fiscally sustainable manner. The Fund can leverage its expertise to flag improvements in the design of carbon taxes and other mitigation measures, the associated redistributive mechanisms, the interaction of such taxes with other fiscal instruments, and communication strategies that would help create more consensus around this instrument. We would nonetheless like to caution against tasking the Fund to track its members' progress in achieving their Paris commitments, given the risk of duplication this would create with the UNFCCC.

We believe that carbon pricing is the most economically efficient tool to address emission externalities, but note that in light of potential domestic resistance, advice on pragmatic approaches is also needed. We believe that there is still scope in many countries to target the lower hanging fruit. Numerous countries still subsidize energy directly or indirectly. Subsidizing a product with negative externalities exacerbates inefficient market outcomes and should be discontinued as a priority. Taxing one specific CO_2 source (e.g. coal) might be a practical first step in countries where such a tax would lead to almost the same outcome as a broad carbon tax. Reducing preferential tax treatments for international transport fuels (air & sea) is also a case in point. Moreover, measures to raise public acceptance are important. In this regard, ensuring that carbon tax revenue redistribution is transparent and sufficiently linked to tangible outcomes through parsimonious earmarking could be useful. Exemptions, even if inefficient, are sometimes needed to secure acceptance, especially if their inefficiencies can be mitigated through alternative measures. Further, starting with so called “no regrets” measures, such as collecting data on CO2 emissions and publishing them could be a first step to raise awareness and acceptance. As a country progresses, we agree that the Fund may increasingly propose carbon taxes, especially if the revenue and environmental benefits are large.

Further analytical work on the distributional effects of carbon taxes and other mitigation instruments could be useful. CO2 reduction is inherently regressive from a distributional point of view, as it implies penalizing or phasing out technologies that are often more relevant for lower-income households, since their budget share for energy consumption tends to be larger. Not many studies compare the overall distributional effects of alternative instruments other than taxes, since their distributional impact is difficult to quantify. This may also create a non-level playing field between instruments, since carbon taxes show their cost upfront, while standards indicate the result upfront, but costs and redistributive effects are not necessarily straightforward.

The Fund should pursue a case-by-case and tailored approach when providing bilateral advice. While we do not see the need for the Fund to address this issue systematically in its bilateral policy discussions, Fund advice can be useful in countries where the implementation of the NDC poses potential challenges to the fiscal framework or macroeconomic stability. The Fund can play a key role by providing countries with relevant data, good practices from other countries, assessments of the current country policy (e.g., through the Climate Change Policy Assessments), and advice on the likely effect of different policy options. The modelling tool presented in this paper may feature among the tools used to advise countries. However, given the crosscutting nature of this topic, we urge the Fund to collaborate with other IFIs and relevant institutions when developing assessment and modelling tools and related TA.

The Fund can leverage its expertise to promote ex-ante physical and financial resilience as two essential pillars in addressing climate vulnerabilities. In terms of physical resilience, the Fund can provide advice on how to improve public investment spending efficiency with its PIMA tool and in cooperation with the WB. Given the high and rising debt levels, it is reasonable to think that public investment to increase physical resilience will occur in many cases in a context of limited space. Increasing public investment spending efficiency appears, therefore, an essential step. We also believe that resilience-enhancing public investment should also take into account costs over the whole life-cycle (including maintenance) to ensure greater fiscal viability. In terms of financial resilience, the Fund can provide advice on fiscal framework design, revenue mobilization, and redistribution. The Fund can also work on better highlighting the fiscal impact of potential climate events and associated contingent liabilities in its DSA framework. It could also contribute in providing advice on catastrophe bonds to enhance resilience. We welcome more details on this issue in the Board paper on Building Resilience in Countries Vulnerable to Natural Disasters.

Mr. Geadah and Ms. Choueiri submitted the following statement:

We thank staff for their paper, which provides country-level guidance on fiscal policies for implementing climate strategies. Climate change will be macro-critical at the global and national levels. It will be useful for the Fund to cooperate closely with other international organizations given the importance of this issue.

The paper presents promising mitigation measures which should be pursued. A spreadsheet model developed by staff indicates that carbon taxes or equivalent pricing for fossil fuels can be attractive on CO2, fiscal, domestic, environmental, and economic grounds. Other instruments that do not raise energy prices, including regulation and feebates, also have potential mitigation benefits. Research and development into clean technologies can be an important complement to carbon pricing in large economies. It is essential to assess the distributional impact of carbon taxes to ensure their acceptability and introduce targeted measures, as needed, to relieve vulnerable groups. At the international level, staff makes a case for a carbon price floor arrangement among willing (ideally large-emitting) countries, that could reinforce the Paris process and partly address inefficiencies from the wide cross-country divergence in prices implied by current mitigation pledges.

We share staff’s assessment that adapting and building resilience to climate change can be costly, particularly in small states. Enhanced access to financing for building capacity, as well as for climate adjustment, is therefore a priority for these countries, especially given the challenges faced by the fragmented criteria among different financing sources. It would thus be desirable for the IMF/World Bank Climate Change Policy Assessments to facilitate access to climate change financing. Staff’s comments would be appreciated.

We share staff’s view that national adaptation strategies should encompass risk diversification across a range of fiscal and financial instruments; full integration of climate risks, fiscal buffers, and climate finance into a sustainable macro-fiscal framework; and inclusion of climate investments into national budgeting procedures. The national strategies should envisage building and maintaining appropriate levels of budget balances, debt levels, and foreign exchange reserves. Resilience building also requires developing capacity in debt sustainability and public investment management. In this connection, continued Fund capacity building support is key for small states given their limited administrative capacity.

In light of its expertise, universal membership, and close relationship with fiscal authorities, we agree that the Fund has a role in providing analysis of (and guidance on) energy pricing and macro-fiscal policies consistent with countries' climate strategies submitted to the Paris Agreement. We agree for the Fund to monitor the macro and fiscal implications of countries' Paris mitigation pledges in bilateral policy discussions and look forward to further discussion on this work before proceeding. Can staff comment on whether we have the adequate resources for the envisaged work? We also agree that the Fund could periodically take stock of countries' progress on their Paris commitments using the kind of methodologies set out in this paper, preferably in coordination with other organizations, including the United Nations Framework Convention on Climate Change (UNFCCC).

Ms. Pollard and Ms. Crane submitted the following statement:

We thank staff for the paper and clear articulation of questions to guide the discussion. We support the IMF playing its role in advising member countries on fiscal policies and trade-offs, including on tax policy approaches chosen by those countries to address climate risks and on fiscal buffers and risk management tools for countries vulnerable to natural disasters. We would stress that member countries are in the driver's seat on policy selection, and caution against the Fund seeking to shift towards an accountability role.

We support the IMF helping countries integrate climate plans into their macro-fiscal frameworks, and the spreadsheet tool may prove useful in this regard. We would stress, however that countries may consider various options for achieving their mitigation goals and that momentum should come from domestic political leadership. We would also emphasize that IMF staff judgement is required in determining when and where climate issues may be macro-critical. We agree with Mr. Gokarn that the Fund should not standardize such discussions, and that the mode of any engagement should be up to individual countries.

We welcome the IMF's work to help countries, particularly small island states and countries most vulnerable to large natural disasters, to appropriately plan for and manage weather-related risks, including through adaptation investments. We encourage IMF staff to coordinate with the World Bank and other international organizations with strong expertise on these issues. We look forward to the future Board discussion on Building Resilience in Countries Vulnerable to Natural Disasters, following up on the informal discussion last November.

We do not see merit in the IMF creating mechanisms for pricing carbon or trading emissions at the international level. We caution against a stock-taking of progress toward Paris climate commitments that could amount to putting the IMF in the center of an accountability exercise. We agree with Mr. Just and Mr. Mehmedi that this risks extending the Fund beyond its expertise and mandate. These are nationally-determined commitments, and climate issues are not core to the IMF's mandate.

Mr. Merk and Mr. Fragin submitted the following statement:

We would like to thank staff for their insightful report on "Fiscal Policies for Implementing Paris Climate Strategies". As part of the Paris Agreement, many countries including Germany promised to undertake ambitious efforts to combat climate change and adapt to its effects. The global reduction of greenhouse gas emissions takes center stage in these efforts. A discussion about practical fiscal strategies for mitigating and adapting to climate change as well as the role of different institutions in these efforts is timely and much needed.

Comprehensive carbon pricing is crucial in order to set the right incentives for a substantial CO_2 emission reduction in line with the Paris Agreement. We agree with staff that carbon taxes can play a central role as a carbon pricing instrument. Taxes can cover all relevant sectors, create predictable pricing and provide government revenues. Emissions trading systems – although their design certainly needs additional fine tuning – can play an important role as well. However, suitable and stable pricing is proving to be a problem so far.

Carbon pricing can have different distributional effects depending on the specific instrument used, the sector addressed, the policy design and the country-specific socio-economic conditions[2]. We agree that a mechanism to

[2] See also Zachmann, G., Fredriksson, G., and Claeys, G (2018). "Distributional Effects of Climate Policies", Bruegel.

redistribute the additionally generated revenues to compensate lower-income households and other vulnerable groups could increase the overall acceptance of carbon pricing in society. Additionally, the design of specific policy measures can already aim at reducing adverse effects and some fiscal climate policy instruments might even include progressive features which favor lower-income households.

While carbon pricing revenues play a key role in the remediation of distributional effects and the financing of climate adaption measures, they should not be the main target of the pricing system. The primary objective of a successful carbon pricing system is to reduce carbon emissions in the long run. Consequently, the revenues that are initially generated will diminish over time.

We support staff's view that international coordination on carbon pricing should be initiated. At the same time, national circumstances come into play, meaning that coordination should allow for national flexibility. The described international carbon price floor seems adequate to guarantee the required flexibility.

The financial sector has special expertise in measuring and managing risk. Therefore, financial institutions can play an important role in the management of increasing risks caused by anthropogenic climate change. However, we strongly caution against the misuse of financial regulation to subsidize green investments. Financial regulation should be risk-based and must not be exploited to drive a certain political agenda. It is no substitute for missing fiscal and environmental policies.

We agree that the Fund has a useful contribution to make, given the already macro-critical nature of climate change in some member countries, the Fund's universal membership and its macroeconomic and fiscal policy expertise. However, we would caution against an overly ambitious agenda of activities for the Fund and would advise against the Fund analyzing and assessing progress on NDCs, evaluating potential revisions to mitigation pledges or to assessing environmental implications of mitigation policies.

Given the utmost importance of the topic at hand, we think the Fund, in the context of its bilateral and multilateral surveillance, could focus its efforts on significant implications of climate change mitigation and adaptation for macroeconomic stability and fiscal sustainability, and on providing advice on the design of fiscal and budgetary frameworks. Furthermore, besides macro-criticality, we would recommend to provide bilateral advice on the basis of members' needs and technical capacity. In addition, we call on staff to leverage the work of, and avoid overlap with other institutions, such as the OECD, the World Bank and relevant U.N. organizations. Finally, staff comments would be welcomed on the estimated implications for the Fund's resources associated with the proposed activities.

Mr. Lopetegui, Mr. Di Tata and Mr. Rojas Ulo submitted the following statement:

We thank staff for the comprehensive report and the outreach before this Board meeting. Fiscal Policies for Paris Climate Strategies merit close attention, as do the objectives and trade-offs among policy options for both mitigation and adaptation. For the Fund, the topic is relevant for being potentially macro critical at the global and national levels, as mitigation and adaptation policies could have significant fiscal implications.

We see that carbon prices constitute the first best option to meet countries' Paris pledges on mitigation. Carbon prices are an attractive option on CO2, fiscal, environmental, and economic grounds. As noted in the report, carbon price trajectories can be aligned with mitigation objectives in Nationally Determined Contributions (NDCs). In this regard, it is certainly helpful for governments to have transparent quantitative frameworks for projecting emissions requirements for their NDC commitments and for assessing the impacts of carbon pricing and alternative policy options.

We agree with staff's suggestion on the need to accompany carbon pricing with other measures to address political and social sensitivities. In particular, we concur with staff that acceptability can be enhanced by adopting a broad strategy detailing how revenues would be used, the assistance to be provided to vulnerable groups, and the pace of reform. A good public communication strategy is very important, as well as paying due attention to country-specific circumstances. Research and development (R&D) into clean technologies, complementary infrastructure, and financial sector policies could play an important complementary role in implementing carbon pricing. We also take note of the staff's recommendation that carbon pricing could be embedded in broader reforms of energy prices to reflect supply and environmental costs, including local air pollution.

It should be recognized, however, that in some countries political considerations may justify considering second best instruments. In general, these instruments are less efficient but more acceptable than carbon pricing. For instance, consideration could be given to introducing feebates, which involve a sliding scale of fees on firms or products with above average energy/emissions intensity and rebates for firms or products with below average energy/emissions intensity. However, as noted in the report, this option, unlike fuel taxes, does not promote the full range of mitigation opportunities, such as encouraging people to drive less.

We believe that the Paris Agreement process might be reinforced through an international carbon price arrangement requiring participants to impose a minimum price on carbon. This would help reinforce domestic mitigation efforts, accommodate diversity, and provide some assurances against competitiveness concerns. As argued by staff, price floor requirements could accommodate both carbon taxes and Emissions Trading Schemes (ETS); have precedents from both a climate and international tax perspective; and it is conceivable that coalitions of countries willing to price carbon emissions may emerge under existing international arrangements. Thus, carbon price arrangements could emerge at the regional level. Moreover, tracking effective carbon prices seems manageable from an analytical perspective.

Because climate change has potential macro critical implications, we believe that the Fund is well-positioned to provide analysis and guidance on energy pricing and policies consistent with countries' climate strategies submitted for the Paris Agreement. The Fund is in a unique position to provide advice on these matters, given its focus on macro and fiscal policies and its universal membership. We see a role for the Fund at both the bilateral level in the context of Article IV consultations and the global level. At the bilateral level, the Fund's comparative advantage seems to reside on the mitigation side. Specifically, the Fund can provide advice on appropriate fiscal tools, including carbon taxation and second-best options, and assess the implications of broader energy price reforms. Besides that, Fund staff can also help develop macro fiscal frameworks fully integrating mitigation and adaptation measures to deal with natural disasters and climate risks. Adaptation strategies require building systems, processes and tools to develop policy actions against climate change impacts, and resilience-building expenditures should be properly integrated into fiscal frameworks to preserve fiscal sustainability. For some countries prone to natural disasters, the Fund, together with the World Bank, has already prepared one-off resilience assessment reports. In the case of low income countries, the targeting of subsidies to alleviate the impact of energy reforms on vulnerable groups constitutes an important topic on which Fund staff can provide valuable advice.

At the global level, the Fund can play a coordinating role, focusing on its areas of expertise and drawing on the knowledge of other international institutions, as needed. It can serve as an advocate of appropriate mitigation measures at the international level, such as a carbon price floor or other more flexible approaches. On a related matter, we welcome the methodology developed by staff to help countries evaluate progress towards meeting their Paris mitigation pledges. This tool provides standardized analysis on a country by country basis of carbon pricing and other mitigation measures that could be used by staff to analyze progress on NDCs across countries in a consistent way.

Looking forward, the Fund needs to determine how much resources to allocate to climate change issues, taking into consideration other priorities. To the extent possible, we would favor that staff prepare a paper on an annual basis to update the Board about developments in this area, including the progress made in implementing Paris Climate Strategies. We would appreciate staff's comments on the resource implications of this initiative.

Mr. Mozhin and Mr. Palei submitted the following statement:

We welcome the discussion of the staff paper on Fiscal Policies for Paris Climate Strategies—From Principle to Practice. The overview of the fiscal policies conducive to the implementation of the 2015 Paris Accord is accompanied by a unique and transparent tool for quantitative evaluation of the trade-offs involved. We support publication of this paper.

The paper will further strengthen the Fund's already well-established track record as an institution consistently advocating and actively promoting reductions of energy subsidies and/or introduction of Pigou taxes. The Fund articulated the benefits of such fiscal policies not only in emerging market and developing economies, but also in some of the advanced economies. Moreover, the Fund's website offers several tools and a lot of useful information on best practices in this area, including in languages other than English[3]. Overall, we believe that the Fund is playing a prominent and useful role in research, policy analysis, and technical assistance. Recent innovations, including the Climate Change Policy Assessments, demonstrate the proactive nature of the Fund's engagement.

[3] IMF and Reforming Energy Subsidies at https://www.imf.org/external/np/fad/subsidies/index.htm

Among the economists, the case for carbon pricing is very broadly accepted. The recent Economists' Statement on Carbon Dividends[4] was just another striking confirmation of this fact.

One of the key challenges to greater reliance on carbon pricing is the lack of public support for such policies, not the lack of research or empirical estimates of the likely effects of various fiscal measures. In many EMDCs it may be tempting to assign this lack of public support to the shortcomings in the authorities' communication policy, weak institutions, or the lack of efficiency in fiscal expenditures. However, the situation in the United States and, more recently, the protests in France point to the fact that the challenges could be more complex than this simple and popular explanation. The Fund could shed more light on the successes and failures in relevant fiscal reforms.

Another challenge for such reforms in fiscal policies aimed at meeting the Paris commitments is coordination between various countries. Recent attacks on multilateralism in international trade and finance further aggravate this problem.

Given that promotion of climate resilience is a long-term issue not necessarily related to balance of payments pressures and financial stability and considering the Fund's already strong track record in advocating and promoting proper fiscal policies, at this stage, we do not see a need for any changes in the Fund's priorities. At the same time, we look forward to the Comprehensive Surveillance Review, which should reflect on the Fund's experience accumulated since 2014, and, on this basis, to define the Fund's medium-term work program.

Mr. Ray, Ms. Preston and Mr. Amor submitted the following statement:

We welcome staff's paper and support the IMF providing practical advice to the membership on policies for addressing climate related risks. The paper demonstrates the important role of fiscal policies in climate change mitigation and adaptation and provides helpful analysis on the trade-offs among a number of policy options.

Mitigating and adapting to climate change is a major issue for the global economy and global wellbeing. Increased frequency and severity of natural disasters are already devasting economies and livelihoods in many countries, including small states. Indeed, as staff note, many small island

[4] Economists' Statement on Carbon Dividends, at https://www.econstatement.org/

states that are no higher than a few meters above sea level face an existential threat from projected sea level rises. The Fund should continue to assist the membership navigate the economic challenges associated with climate change by leveraging its core areas of expertise. In particular, we support the Fund helping countries integrate climate plans into their macro-fiscal frameworks, including the integration of natural disaster risks in macroeconomic frameworks, debt sustainability analysis and public financial management frameworks.

Climate mitigation strategies have large fiscal implications that are especially noticeable in small states, who are already fiscally constrained. While we welcome the Climate Change Policy Assessments that are underway in collaboration with the World Bank, identified financing investments remain very critical to complementing national efforts. In this regard, we encourage the Fund to step up technical assistance to close policy gaps and help unlock climate financing, which can be incredibly complex to access. Further, we remain optimistic that the outcome of the LIC Facilities Review will help members with respond to natural disasters and climate related shocks with an increase in access limits and shorter response time for the RCF/RFI instruments. We also look forward to the future Board discussion on Building Resilience in Countries Vulnerable to Natural Disasters.

IMF staff judgement is required in determining when and where climate issues may be macro-critical. We welcome the staff analysis on tradeoffs between mitigation instruments, but caution is required before recommending a specific approach. The optimal mix of measures and the use of carbon pricing revenues must reflect political economy considerations as well as economic efficiency. We agree that carbon pricing is an efficient and direct way to curb carbon emissions, however other instruments—such as regulation or climate finance—also have significant potential mitigation benefits, and the full range of pricing and non-pricing instruments should be further explored. We also agree with Mr. Gokarn that the Fund should not standardize such discussions, and that the mode of any engagement should be left to individual countries.

Coordinated international action informed by high quality analytical work will be required to support climate change mitigation and adaptation efforts. Staff's paper takes a step in the right direction. However, there are a number of areas in the paper where further analytical work may be needed to advance these objectives.

The idea of a global floor price on carbon raises issues of equitable burden sharing, which may undermine the Paris Agreement's bottom up approach whereby each country sets its own commitment as its Nationally Determined Contribution (NDC). In addition, like Ms. Pollard and Ms. Crane, we do not see merit in the IMF creating mechanisms for pricing carbon or trading emissions at the international level.

Further, there may be some areas of the Fund's methodology that may need further reflection to ensure climate change modelling is comprehensive. These include modelling future abatement opportunities from changes in technology, general equilibrium effects, abatement opportunities outside of CO2 and more holistic welfare measures. Staff comments would be welcome.

For countries that are relatively small emitters in the global context, the multilateral benefits are the key drivers of action. The paper includes analysis which shows that for some countries, including Australia, additional unilateral action has a negative cost-benefit (see Figure 6, page 30). Abstracting from the benefits of multilateral action in this way (i.e. the global climatic benefits) could be counterproductive to advancing well informed national discussion.

Lastly, the United Nations Framework Convention on Climate Change (UNFCCC) is the primary international, intergovernmental forum for negotiating the global response to climate change. Like Ms. Pollard and Ms. Crane, we caution against a stock-taking of progress toward Paris climate commitments that could amount to putting the IMF in the center of an accountability exercise.

Mr. Daïri and Mr. Nadali submitted the following statement:

We thank staff for a well-written paper that provides practical country-level guidance on fiscal policies to implement climate mitigation and adaptation strategies under the 2015 Paris Agreement. We agree that climate change is potentially macro-critical at the global, and in many cases national level, and meeting the goals of containing projected global warming would imply rapid transitions to low-emission economies, consistent with other sustainable development goals (SDGs). We are in broad agreement with staff analysis and recommendations, and wish to offer the following remarks:

Analysis of policy options at the domestic level complemented by pricing and financing at the international level can help move the mitigation policies forward and meet the nationally determined contribution (NDC) commitments. Given the perception that potential benefits from mitigation mostly accrue to other countries and to future generations, and considering political economy and resource constraints, financial support by advanced economies (AEs) is critical in bolstering incentives in developing countries (DCs) to implement climate projects. We note the substantial gap between the funds pledged by AEs and the initial investment needed by DCs over the next decade and wonder if this gap could realistically be filled by new revenue mobilized by carbon pricing or other sources. Staff may wish to comment.

Mitigation strategies addressed in the paper, be it carbon pricing or emissions trading systems, should be comprehensive and well designed, with the revenues used widely, including for funding productive investments for SDGs. However, both instruments have fallen short in meeting these criteria in practice. Considerable differences exist in the use of revenues generated by these two schemes in lowering distortionary taxes and in increasing environmental spending. Could staff elaborate on the reasons behind such wide variations?

Carbon pricing can contribute significantly to achieving mitigation objectives in NDCs. We agree on the need to use second-best mitigation instruments if needed for sociopolitical reasons, upgrade existing infrastructure, and advance research and development into and redirect finance towards clean technologies without losing sight of financial stability. Carbon pricing as part of a broader reform of energy prices should be accompanied by well-targeted social safety nets to protect vulnerable households and firms.

The spreadsheet tool developed by staff to help countries evaluate progress towards their mitigation pledges illustrates considerable cross-country dispersion in emissions prices. While a US$35 per tonne carbon price appears sufficient to meet mitigation pledges for large emitters on average, many other countries need prices over US$70 per tonne. We note likely substantial efficiency gains from some degree of price coordination to enable the same reduction in global emissions to be met at a smaller global cost and wonder if large-emitting countries have expressed willingness to coordinate price floors by transferring mitigation outcomes (ITMOs) across national governments, as foreseen in the Paris Agreement. Staff comments are welcome. We also see merit in concrete policy action by the UN agencies for international transportation to implement the announced mitigation objectives while developing alternative fuel technologies and putting in place compensation schemes for small island developing states vulnerable to higher tourism or shipping costs.

An overarching adaptation strategy across a wide range of areas and embedded within a sustainable macro-fiscal framework is essential to build buffers, promote risk diversification, and boost climate resilience. This includes establishing natural disaster savings funds, mobilizing official and private financing, and strengthening public financial and debt management to maximize expenditure and investment efficiency. We note significant capacity gaps in small developing states (SDS) and LICs, welcome joint Bank-Fund climate change policy assessments (CCPAs) conducted thus far and appreciate staff indicating if and when CCPAs and public investment management assessments (PIMAs) would be extended to all climate-vulnerable SDS and LICs.

Given budget constraints, Fund's work on climate change at the country level should be guided by the test of macro-criticality, focus on areas of Fund's expertise and core competence, including in energy pricing and macro-fiscal policies, and benefit from a proper division of labor with other IFIs, including the World Bank. We endorse Fund's periodic stocktaking of progress under NDCs, providing policy advice consistent with climate considerations, and emphasizing opportunities from climate-resilient economies. However, given that Paris mitigation pledges are voluntary, their discussion in Article IV reports should not create any new obligations for the membership and, as suggested by Mr. Gokarn, it should be left to countries to engage with the Fund on these issues and decide on the appropriate mode of engagement.

Mr. Jin, Mr. Sun and Ms. Cai submitted the following statement:

Climate change is a global challenge requiring a global response. Combatting climate change and promoting green and low-carbon economy has become one of the policy priorities for most members. In this global effort, it is critical to recognize that the path and pace for each country to achieve its emission reduction goal are different due to country-specific circumstances. Since views remain divergent on some important issues relating to carbon emission reduction mechanisms, we consider it premature for staff to draw conclusions on fiscal policies in this area, and encourage staff to conduct further analysis. Our specific comments are set out as follows.

We welcome staff's discussion on fiscal policies for implementing climate strategies and recognize the potential merits of carbon taxes or equivalent pricing for fossil fuels. That said, we emphasize that carbon tax and other equivalent pricing tools are only one possible way of reducing emissions, and encourage further analysis on how fiscal policies can complement other measures, such as the development of carbon emission trading markets, in a country's overall climate change strategy. In providing policy advice, staff should also take into account the potential spillover impact that may arise from imposing carbon taxes and consider possible mitigating measures, including redistribution of carbon tax revenues to protect the vulnerable. Furthermore, given the different development stages and national circumstances, as well as the large divergence in effective carbon prices, additional analysis is needed on the feasibility of setting an international carbon price floor, as well as the possible impact on a country's development costs and competitiveness of implementing such a measure.

For some economies, a market mechanism like the carbon emissions trading system can be more effective in reducing the overall cost of emission reduction and controlling greenhouse gas emissions, while promoting technological innovation and industrial structure upgrades. From a global perspective, the carbon market is playing an increasingly important role as a means of enhancing global climate governance. In China, pilot projects on developing a carbon emission trading system have been undertaken in seven provinces and cities since 2011. These projects have successfully achieved the reduction of both total carbon emissions and carbon intensity.

Meanwhile, green finance could help fill the financing gap when advancing a country's mitigation and adaptation strategy. We encourage staff to do more research on how to better leverage the financial sector in this regard, including in terms of supportive policy measures. For example, accepting eligible green bonds as collateral for central bank monetary operations could potentially increase the attractiveness of these bonds, and in turn, promote the development of green finance. Could staff share on possible policy measures that can facilitate the development of green finance and complement efforts to tackle climate change?

We believe it is critical to recognize country-specific circumstances when conducting cross-country analyses and comparisons. In particular, pledges are often a result of careful deliberation that takes into account political and social acceptance considerations that are specific to a country. We also urge staff to give due consideration of capacity constraints and potential adverse impact on the economy in their policy advice, and caution against setting unrealistic reduction targets for countries. We encourage the Fund to actively provide technical assistance to low-income and fragile countries to help build capacity in emission reduction and formulate adjustment strategies. Could staff elaborate more on the TA that has already been provided in this respect and their effectiveness so far?

Given that consensus is yet to be reached on the optimal emission reduction method, we believe more work is needed before giving specific advice in this area. We associate ourselves with Mr. Doornbosch and other EDs that the optimal mix of measures must reflect political economy considerations as well as economic efficiency. Should mitigation polices be integrated into the Fund's surveillance, a practical and flexible approach is warranted. In addition, given the Fund's expertise does not cover the full spectrum of possible measures to tackle climate change, continued close collaboration with other organizations is needed to avoid limiting policy advice to a subset of options, and facilitate the development of more implementable, effective, and comprehensive advice for members.

The Chairman made the following statement:

I would like to make a few comments about this paper, which has been produced by a remarkably small group of people. In terms of value for people, I am impressed with what they can produce, and the amount of work is impressive given the limited number of experts in our institution.

The paper takes the position that the commitment that countries entered into—and it is surprisingly 190 countries, and I have to find out which country is the 190^{th} signatory that is not a member of this institution—raises macrocritical issues for many, if not all, members, and those issues center around fiscal policy, falling squarely within the Fund's mandate. I know that some Directors debate the size of the mandate that has a macrocriticality aspect to it in terms of delivering on the commitments that were made, and Directors raised those issues in some of their gray statements. It also has implications for the financial markets, and that has been now amply recognized by the head of the Financial Stability Board (FSB) in various papers. It has been recognized by the grouping of central bank governors from various countries who recognize that, as part of their mandate, they should also pay attention to those issues and see how they intersect with their supervision duties.

The Fund, because of its very large membership, is uniquely positioned to advise on the implications of the climate commitments for fiscal and macro-fiscal policy. The Fund its also uniquely positioned given its expertise, however limited, its top quality, universal membership, and the close relationship with finance ministers who clearly are involved, should be concerned, and hopefully will focus on those issues. It is not an issue for environmental ministers or deputies, but clearly and squarely an issue for finance ministers.

The starting point of this paper is to look at the commitments made by the 190 countries. It discusses issues and options to meet those commitments. There is a clear bias for carbon taxation, but there are many other options that are looked at as well and particular cases that are explored, and it is not just about oil. It is about the entire sphere of greenhouse gases.

The virtue of this paper is that it goes through not just the principle and the impact that it has, but the way in which it can best be introduced, and all the areas surrounding communication, tax neutrality, revenue neutrality, and the way it can be accepted by people whenever it is implemented.

This is essentially on the mitigation side. On the adaptation side, the Fund is extremely active in conjunction with other institutions, in particular with the World Bank, where clearly the four cases of Seychelles, St. Lucia, Belize, and Grenada have been focused on, and those countries have received guidance on resilience-building, mitigation, and climate financing strategies. Why those islands? Because they are more vulnerable, have less capacity, and can be the first and prime victim of what could very well be coming.

I believe the paper provides a sense of the technical contributions that the Fund can make in its multilateral surveillance. It also raises the question of how and whether those issues can be taken into account as part of the bilateral surveillance.

The paper raises many other important issues for us to consider, such as how the Fund can best promote climate resilience in vulnerable countries, political economy considerations and how they affect policy design, and we have clear examples of how it has worked reasonably well, suggestions for voluntary carbon price floor arrangements to reinforce regional carbon pricing initiatives among large emitters, and there were suggestions from some Directors that a cluster approach to that topic might be interesting.

I do not want to go further and deeper into these issues, which we should all be concerned about, but our duty is to look at the way in which from a fiscal and financial point of view, some of those concerning matters can be best addressed.

Mr. Tombini made the following statement:

I thank the staff for the comprehensive report. I suspect the country that we were mentioning in the beginning is Nicaragua. If I am not mistaken, the authorities thought the commitments were too weak so decided not to sign.

This chair acknowledges that adverse effects of climate change present a macrocritical issue to many economies and to the global economy, and mitigation and adaptation measures are essential to addressing this challenge. We support the Fund's role in providing advice to members and assisting with the integration of the voluntary climate plans into their macro-fiscal policies and risk management tools. While we appreciate the staff's effort to design fiscal instruments with a view to help countries achieve their nationally determined targets, we agree with Ms. Pollard and Ms. Crane, among other Directors, in cautioning the Fund against seeking to shift toward an accountability role with the commitments on climate issues, which are not core to the Fund's mandate. Therefore, discussion surrounding the issue should not be standardized, as pointed out by Mr. Gokarn, and the mode of engagement should be up to individual member countries.

Furthermore, we agree with Mr. Just and Mr. Mehmedi that stocktaking of progress toward Paris climate commitments is a risk that extends the Fund beyond its expertise and mandate. Also, we see limited merit in the Fund getting involved in mechanisms for pricing carbon or trading emissions at the international level. As an institution, it is important the Fund sets an ambitious agenda; however, we feel that an overambitious agenda may be counterproductive.

Considering the significant challenges that are facing small states, development of a cost-effective ex ante resilience framework is fundamental to address their needs. Since its launch, this chair has strongly supported the IMF-World Bank Climate Change Policy Assessment (CCPA). We believe that expanding this exercise to include other and more diverse countries can be beneficial in assisting with building a coherent macro framework for vulnerable countries to respond to climate change and natural disasters. We also believe that the Fund, in cooperation with the World Bank, should play an instrumental role in helping these countries build ex ante buffers. In the long-term, the CCPA will enable the Fund to gather more expertise on environmental issues.

Ms. Levonian made the following statement:

We commend the staff for their insightful and interesting paper and welcome the opportunity to discuss this important topic. We issued a comprehensive gray statement, so I will touch lightly on a few items. We want to stress the importance of a comprehensive approach to addressing climate change. We see this as particularly relevant for small developing states and low-income countries (LICs). Some of these countries are already grappling with the impact of rising sea levels and the increasing frequency and severity of natural disasters. The need for adaptation policies to build ex ante resilience is therefore of utmost importance. We welcome the Fund's recent focus on building ex ante resilience. We urge continued emphasis in this area. Accordingly, we support the comments in the joint gray statement of Mr. de Villeroché, Mr. Fanizza, Ms. Riach, Mr. Doornbosch, and Mr. Obiora, as well as those of other chairs, on the need for special attention to be dedicated to small states. We look forward to the upcoming Board discussion on building resilience in countries vulnerable to natural disasters, which we hope would provide further useful guidance in this area.

Given the large fiscal implications of climate policy, access to predictable and affordable financing is critical. Like Mr. Ray and others, we encourage the Fund to help small states gain access to funding for climate mitigation and adaptation purposes. Furthermore, we believe that some analysis of spillover effects of carbon pricing on small states and LICs would be useful.

Furthermore, I believe there is general agreement in certain areas. On the macrocriticality of climate change, especially for small states and LICs, for example, quite apart from the significant macroeconomic and fiscal fallout that result from these impacts, these countries are the least contributors to the problem but are disproportionately affected. They are also the least capable of transitioning to renewable sources of energy given their significant financial and capacity constraints. It is my sense that most chairs see merit in the full range of mitigation instruments. There are areas for further analytical work to better help members in the design and implementation of the appropriate mix of policies. I also believe the need for the Fund to play a key role in helping its members tackle climate change by leveraging its expertise, universal membership, and close collaboration with key stakeholders is clear, as is the fact that policy advice on climate change should take into account country specifics, including due consideration to financial, capacity, and political economy factors. In addition, the need to integrate the macro and fiscal implications of climate pledges in bilateral and multilateral surveillance is clear.

There is less clarity on some issues. Importantly, more clarity is needed on how the Fund should engage in the climate change space, vis-à-vis other international players. With respect to this, we support Mr. Just and Mr. Mehmedi on the merits of a staff guidance note on how the Fund should engage on climate change in Fund surveillance. We would welcome the staff's comments in this area.

Mr. Doornbosch made the following statement:

I would like to start by thanking staff—it is a small team, so I can mention them all, Mr. Parry, Mr. Davies and Mr. Mylonas—for the excellent work done developing this powerful analytical instrument on display in the paper and also for the outreach of Mr. Keen in preparation of this meeting. I believe the paper provides a good overview of how climate change dramatically impacts fiscal policy in almost the entire membership.

With the demand for energy set to grow by more than 50 percent in the next 30 years and emissions use set to be reduced by 80 percent, it is not that difficult to see how this is macrocritical. That is from a mitigation point of view. It is even easier to see why it is macrocritical from an adaptational disaster-resilience point of view. One that is very close to me and maybe also to the Chairman is the immediate impact of hurricane Irma in 2017 on St. Martin that swept away almost 100 percent of GDP in less than five hours.

Perhaps it is mostly fiscal, but certainly it is not only fiscal. With more than US$2 trillion of investments every year in new energy supply, the shifts in savings and investment patterns will have a direct and significant impact on global imbalances. As the Chairman mentioned in her opening remarks, if the energy transition is accompanied by abrupt shocks, financial stability risks are likely to emerge. Climate change goes to the heart or the core of the Fund's mandate as of today and if not, it will be dramatically so tomorrow. I am very excited about today's Board meeting.

For many years, the Chairman has shown excellent leadership in addressing the importance of climate change for global prosperity, the world's economy, and the work of the Fund. But it is also fair to say that we have not always rushed to follow, and I appreciate this has changed; that we can and have stopped talking about whether climate change is or is not critically impacting the core of the Fund's mandate, and that we start discussing how to integrate climate considerations in the Fund's work not only in the functional departments, as it is mostly now, but in the advice country teams give to authorities—so really changing the machinery of the Fund.

The paper gives some good suggestions of how to do this with help of the spreadsheet tool, and it is helpful to show the relative efficiency of different instruments in achieving mitigation objectives. However, and I agree with Mr. Agung, Mr. Moreno, and many others, who argue that the Fund's analysis and advice should take national circumstances, distributional consequences, political economy considerations, into account, and for this, it is necessary to seriously up our game.

The Board should ask the staff to work on a comprehensive strategy to implement climate change consideration in its advice on fiscal and financial sector policies. Fortunately, this does not have to be as hard as for other new areas, such as governance and cyber. Climate change considerations are much closer to the Fund's bread and butter. The knowledge and experience required in designing appropriate mitigation strategies is to a large extent close to designing effective tax revenue systems. Building ex ante resilience in macro-fiscal frameworks of small island states shows clear similarities with sustainable public financial management (PFM) systems.

I do not believe the Board should be prescriptive on the exact way to achieve the integration of climate change considerations in the core activities of the Fund, but the paper provides excellent suggestions. To implement those, like Ms. Levonian and Mr. Just, I believe it would be helpful if the staff could write a guidance note to assist country teams. Along the lines of the governance framework, the staff could continue to work on the analytical framework, particularly on non-energy emissions that account for at least 25 percent of total greenhouse gas emissions and on the complementarity between pricing and non-pricing instruments.

In closing, someone will say that we should wait until we have finished the Comprehensive Surveillance Review (CSR), and surely we are going to think about surveillance, and we are going to change the modalities, but I believe we should not wait because every year we delay, the costs are very high.

Ms. Riach made the following statement:

We signed a fairly comprehensive joint statement with Ms. Doornbosch, Mr. de Villeroché, Mr. Fanizza, and Mr. Obiora, so I will limit my remarks to just three points.

First, I wanted to join others in offering our support and appreciation to the staff for the excellent paper. There is a lot of food for thought here, and I hope that this will be the first of many discussions on this issue over the coming years and months to allow us to properly consider this large, important, and evolving agenda. A low emissions economy will look very different from today's model, not just in terms of how we make and use energy but also infrastructure, plastics, food, and transport. I agree with

Mr. Doornbosch on the need for a comprehensive approach. Managing the transition will be a major macroeconomic task for all member countries, including considering distributional aspects, investment needs, institutional changes, as well as standard macro policies. There is an obvious role for the Fund in supporting the macroeconomic aspects of this transition.

The United Kingdom’s experience demonstrates that climate change mitigation and economic growth can go hand in hand. Since 1990, we have reduced our emissions by more than 40 percent while growing the economy by more than two-thirds. We therefore see a strong case for the macro and fiscal implication of countries’ Paris mitigation pledges to feature in bilateral policy discussions. As Mr. Gokarn, Ms. Pollard, and Mr. Ray have highlighted, we may need to give a bit more thought to the methodology that is to be followed by staff.

Second, carbon pricing has been an important instrument for the United Kingdom’s progress and has helped us to reduce the use of coal for electricity in particular. Alongside the EU emissions trading scheme, we have a carbon price support rate which electricity generators must pay on top of the EU Emissions Trading System (ETS) price. As our joint gray statement highlights, other measures can play a complementary role. The optimal mix will depend on technical, political, and other constraints and opportunities within member states. We would urge the staff not to be too prescriptive in their policy recommendations but rather support countries in achieving their nationally determined contributions (NDCs) in whatever way they deem to be most effective and efficient. In a similar vein, the paper highlights the role of revenue generated by carbon-pricing instruments, which is helpful. It should remain also at the discretion of policymakers how this revenue is used in line with their fiscal approach.

Third, we agree that the financial system plays a key role in supporting the transition to a sustainable economy and that it is important to consider the financial risks that arise from climate change. We look forward to learning more about the developments in stress testing climate-related risks in the forthcoming Financial Sector Assessment Program (FSAP) review.

Finally, I strongly echo Ms. Levonian’s point on the need for a holistic approach to promote resilience in countries vulnerable to natural disasters. We agree that financing for resilience should be fully integrated into fiscal policy frameworks and that the Fund has a key role to play in advising members on the appropriate layering of disaster risk financing. We are, however, not convinced that such a strong emphasis on saving funds is warranted. There are a plethora of risk-transfer instruments now available designed to provide more cost-effective, predictable, and affordable financing than reserves and savings funds can at the country level. I would thus encourage the staff to engage with the debate on costs and benefits of different financing options and instruments. This will allow the Fund to enhance its support to members in developing and implementing comprehensive disaster risk finance strategies.

Mr. de Villeroché made the following statement:

I will focus my intervention on three points that are important issues for this chair.

First, we are convinced that mitigation and adaptational policies to climate change are macrocritical for the Fund's mandate, and we support an increased engagement on this policy in the Fund's surveillance work. Climate change is already having and will increasingly have a significant impact on the economic trajectories of the whole membership. Mitigation and adaptation policies that countries will implement in the coming years will also have macrocritical economic consequences. Moreover, climate change is a global issue, and international spillovers of climate-related economic policies are strong. For all these reasons, the analysis of economic policies related to climate change cannot remain absent from the Fund's analytical and surveillance toolkit, and going forward, we believe it is crucial that management adequately manages the Fund's resources to ensure that area departments are equipped and sufficiently trained to answer to this new challenge.

My second point is on carbon pricing. Either through a carbon tax or an emission trading scheme, we believe it is an efficient instrument to reduce greenhouse gas emissions. At the same time, we would also like to stress the importance of complementing this carbon pricing with instruments which are not necessarily based on pricing. Energy efficiency regulations, public investment in renewable energy, financial incentives for climate-friendly investments are examples of non-pricing policies that can be used as variable complements to carbon pricing. For LICs and even for some emerging countries, we believe that these policies will continue to play a prominent role, and are sometimes easier to implement than carbon pricing. In this regard, we are convinced that climate finance mechanisms engaged by development banks will continue to play a key role to help developing countries deploy such instruments, and we would encourage the Fund to collaborate with these countries with multilateral development banks (MDBs) when possible.

More broadly, we encourage the staff to enlarge the scope of policies and instruments that could be integrated in its analytical framework. We notably see climate change as an interdepartmental work and would value further contributions from the Monetary and Capital Markets Department (MCM) on this issue going forward.

My last point is on the design of mitigation strategies so that they are politically and socially acceptable. While mitigation policies bring long-term economic and social gains, their short-term impact can be detrimental to growth, which can cause inequality among households and firms. Integrating this dimension in the discussion up front and thinking through the social consequences of any mitigation policy is thus crucial to help national authorities design their climate strategies. It is similar to many tax issues; when we change things, there are winners and losers. For energy subsidy reforms, these call for developing appropriate analytical tools as well as well-thought-out communication strategies to help the staff in formulating its policy recommendations.

In addition, uncoordinated mitigation policies could be harmful to the competitive countries that are the most ambitious in terms of carbon-reduction strategies, and here we agree with the staff that international cooperation is necessary. In this regard, options such as international price flows and border adjustment carbon tax need to be explored further. I will finally associate myself with the recommendation to issue a staff guidance note going forward.

Mr. Raghani made the following statement:

We welcome the Board’s discussion on fiscal policies for implementing the Paris Climate Strategies. We commend the staff for their useful report on this pertinent issue and the Chairman for her introductory remarks. We have issued a gray statement and would like to provide the following comments for emphasis.

We see merit in the Fund’s increased interest in climate change issues as economies and the population of all countries are affected regardless of their level of development. Any person who is familiar with some countries in our constituency, particularly in the Sahel region, knows how much the GDP of some of them are affected by climate change.

It is also equally important to encourage a supportive involvement of the Fund given its expertise on fiscal-related issues and the potential macrocriticality of climate change. Carbon pricing could play an important role in achieving the objectives of countries' climate strategies. To be effective, carbon pricing should be well-designed, comprehensive, and take into account country circumstances, notably with regard to LICs. Given the impact of carbon pricing on energy prices, there will be a need to combine carbon pricing with a substantial information campaign on the use of revenue stemming from its implementation.

On establishing a carbon flow at the international level, countries' participation should be on a voluntary basis and reflect the particular circumstances that need to be taken into consideration to preserve their international competitiveness.

With regard to adaptation strategy, we agree that a successful implementation requires both Board actions to strengthen countries' resilience and reduce their vulnerabilities to climate change effects. In view of the financial cost of adaptation efforts, notably for LICs, we encourage advanced economies to remain committed to mobilize US$100 billion a year from 2020 to support developing economies.

Given that LICs are highly vulnerable to climate change and natural disasters, we see the Fund playing a key role in providing needed support to strengthen these countries' fiscal policies as well as their fiscal institutions. The Fund's assistance will also help countries to assess the fiscal impact of their mitigation and adaptation strategies to climate change. In doing so, it will be essential to provide advice on the macroeconomic and fiscal policy framework consistent with climate considerations without forgetting those workers and communities affected by the shifts to a low carbon economy.

Finally, we are also of the view that the Fund could assess on a regular basis the progress made by countries on the macro-fiscal front to achieve their climate strategy under the Paris Agreement. Integrating this assessment into bilateral surveillance will help to further strengthen countries' macro-fiscal frameworks.

Mr. Trabinski made the following statement:

First, I believe it is Liechtenstein which signed the Paris Accord while not being a member of the Fund. Apart from that, we welcome the staff's paper on fiscal policies for implementing the Paris Climate Strategies. We perceive it to be timely and important, as it helps address climate risks and meet countries' mitigation commitments under the Paris Agreement. We issued a gray statement, and we have a few additional comments from our side.

The Fund has a role to play in supporting members on how to design, adjust, or improve their fiscal framework to implement their NDCs in an economically efficient and fiscally sustainable manner. It can also greatly help by supporting climate-vulnerable countries to devise effective adaptation plans in order to increase their resilience.

Like Mr. Tombini, we nevertheless believe that the Fund should remain cautious to avoid overextending its mandate and taking over functions that are covered by other organizations. We believe that first-best solutions in the form of carbon taxes might not always be feasible due to political economic considerations. We thus encourage the Fund to offer tailored advice to members, taking into account their constraints and preferences. We also want to highlight that there is still room to target lower-hanging fruit in numerous countries, like energy subsidies.

Finally, we would like to emphasize the role of building fiscal buffers to enhance resilience to climate change in more vulnerable countries. The Fund can leverage its expertise to provide advice and technical assistance (TA) on fiscal framework design, revenue mobilization, and redistribution. The Fund can also work on better highlighting the fiscal impact of potential climate events and associated contingent liabilities in its Debt Sustainability Analysis (DSA) framework.

With respect to improving public investment efficiency, we encourage members to factor in costs over the whole life cycle, including maintenance, to ensure greater fiscal viability.

Mr. Merk made the following statement:

We commend the staff for the insightful report on this important topic. Discussion about practical fiscal strategies for mitigating and adapting to climate change, as well as the role of different institutions in these efforts, is timely and necessary.

We concur with the staff that comprehensive carbon pricing is crucial to set the right incentives for a substantial CO2 reduction in line with the Paris Agreement. We also agree that international coordination on carbon pricing should be initiated, albeit with due regard to the required national flexibility. The described international carbon price floor seems adequate in this regard.

As for the role of the Fund, we agree with the staff and many colleagues that the Fund has an important contribution to make given the already macrocritical nature of climate change in some member countries, the Fund's universal membership, and its macroeconomic and fiscal policy expertise.

In the context of its bilateral and multilateral surveillance, the Fund could focus its efforts on significant implications of climate change mitigation and adaptation for macroeconomic stability and fiscal sustainability. The Fund could also provide advice on the design of fiscal and budgetary frameworks.

Lastly, we call on the staff to stay mindful of resources and to continue leveraging the work and avoiding overlap of other institutions such as the OECD, the World Bank, and the relevant UN organizations.

Mr. Di Tata made the following statement:

We thank the staff for the comprehensive and excellent report and the outreach before this Board meeting. Fiscal policy for Paris Climate Strategies merits close attention, as do the objectives and tradeoffs among policy options for both mitigation and adaptation. For the Fund, the topic is relevant because it is potentially macrocritical at the global and national levels, as-mitigation and adaptation policies could have significant fiscal implications.

We believe that carbon pricing constitutes an attractive and efficient option to meet countries' Paris pledges on mitigation. We agree with the staff's suggestion on the need to accompany carbon pricing with other measures to address political and social sensitivities. Acceptability can be enhanced by adopting a broad strategy detailing how revenues would be used, the assistance to be provided to vulnerable groups, and the pace of reform. A good public communication strategy is important, as well as paying due attention to country-specific circumstances. It should be recognized, however, that in some countries political considerations may justify considering second-best instruments. In general, these instruments are less efficient but could be more acceptable than carbon pricing.

We believe that the Paris Agreement process might be reinforced through an international carbon price arrangement requiring participants to impose a minimum price on carbon. This would help strengthen domestic mitigation efforts, accommodate diversity, and provide some assurances against competitiveness concerns. As argued by the staff, price flow requirements could accommodate both carbon taxes and emissions trading schemes and have precedents from both a climate and international tax perspective. Carbon price arrangements could also emerge at the regional level.

We believe that the Fund is well positioned to provide analysis and guidance on energy pricing and policies consistent with countries' climate strategies. We see a role for the Fund at both the bilateral level in the context of Article IV consultations and through TA and at the global level. At the bilateral level, the Fund's comparative advantage seems to reside on the mitigation side. Specifically, the Fund can provide advice on appropriate fiscal tools, including carbon taxation and second-best options, and assess the implications of broader energy price reforms. Fund staff can also help develop macro-fiscal frameworks that fully integrate mitigation and adaptation measures to deal with natural disasters and climate risks. In LICs, the targeting of subsidies to alleviate the impact of energy reforms on the poor and vulnerable groups constitutes an important topic on which Fund staff has provided and can continue to provide valuable advice.

At the global level, the Fund can play a coordinating role, focusing on its areas of expertise and drawing on the knowledge of other institutions, as needed. It can serve as an advocate of appropriate mitigation measures at the international level. We welcome the methodology developed by the staff to help countries evaluate progress toward meeting their Paris mitigation pledges and encourage the staff to continue working to improve it as needed.

To conclude, looking forward, the Fund needs to determine how much resources to allocate to climate change issues, taking into consideration other priorities. To the extent possible, we would favor that the staff prepares a paper on an annual basis to update the Board about developments in this area, including the progress made in implementing Paris Climate Strategies.

Mr. Mouminah made the following statement:

We thank the staff for the useful work and outreach, and we welcome the opening remarks. We are one of the countries that signed and committed to the Paris Agreement. No matter how much natural resources one has underground, this is a global commitment.

We have issued a gray statement, and we have five points to make. First, we share the view of Mr. Kaizuka that each country should determine its own policy tools to meet its Paris commitment based on national circumstances. This may include one or more market and non-market measures considering economic efficiency, political economy, and distributional aspects, points also raised by Ms. Riach. Notably, distributional considerations are important as imposing carbon taxes over and above the existing huge tax burden on fossil fuels will make the situation even more aggressive since the burden of high energy prices falls disproportionately on poorer segments of population.

Second, like Ms. Pollard, we caution against stocktaking the progress toward Paris commitments that could amount to putting the Fund at the center of an accountability exercise. Mr. Trabinski has also rightly cautioned against tasking the Fund with tracking members' progress in achieving their commitments. In this context, we echo the points made by Mr. Gokarn that it should be up to countries to engage with the Fund on these issues and for them to decide on the appropriate mode of engagement.

Third, as noted by Mr. Mozhin, the case for carbon pricing is broadly accepted among economies, but there is a lack of broad public support for these policies, as recent developments confirm. It is therefore not surprising that only a small subset of Fund membership has introduced carbon taxes so far. The lack of broad support is also due to the existing huge burden on consumers due to excessive taxes on fossil fuels, which effectively amount to substantial carbon pricing even without new carbon taxes.

Fourth, mitigating climate change would require action across a number of sectors and not only fossil fuels. Considering the Fund's limited expertise, it is clear that the UN Framework Convention on Climate Change should be the primary forum for negotiating the global response to climate change, a point rightly underlined by Mr. Ray.

Finally, we have a number of reservations about the background section on the draft press release. This is not consistent with the guidance note on the Fund's Transparency Policy, which describes that it should be short and factual. We also consider that the draft preempts the Board summing up. It provides extensive detail on staff recommendations that may or may not be endorsed by the Board. We would encourage the staff to review it and shorten it.

Mr. Kaizuka made the following statement:

We welcome the analysis at this critical juncture for tackling the climate change challenges, which is a macrocritical issue for a certain number of countries.

We believe that the Fund should contribute to contribute to tackling climate change through its analytical work, such as this paper, and also through the provision of related TA. Let me turn to the specific comments.

First, echoing to the joint gray statement drafted by Mr. de Villeroché, Mr. Fanizza, Ms. Riach and Mr. Doornbosch and Mr. Obiora, the Fund should engage in the work on the climate change as a totality, with the Monetary and Capital Markets Department (MCM), the Research Department (RES), and other departments utilizing their own competitive edge to tackle these issues. We would like to see a more comprehensive Fund-wide approach on the issues.

We have some reservations about paragraph 64 of the paper, particularly the two lines which state the Fund might periodically take stock of progress toward delivering on the Paris commitments, and the bilateral surveillance could integrate standardized analysis of mitigation policies. Each party of the Paris Agreement should decide and implement its policy options by itself, including fiscal, financial, macroeconomic, and structural policies, taking into consideration its socioeconomic and political realities. That is a country's prerogative. Here carbon tax could be one of the powerful policy options but might not necessarily be the only one nor the best one.

Second, under the Paris Agreement, the parties are required to report progress on implementing NDCs every two years and to submit the revised pledge every five years. If the Fund would engage in the policy assessment on this particular front, it should be integrated systematically in this mechanism of the parties so that the Fund could be more legitimate.

Creating the Platform for Collaboration on Climate Change (PCC) might be an idea, but I know Mr. Keen would not be enthusiastic about this idea.

Mr. Just made the following statement:

When we discussed the Chairman's statements to the Paris Climate Summit, this chair was among the few that saw a clear road for the Fund in helping the membership address the risks and challenges stemming from climate change. Like Mr. Doornbosch, we continue to value the leadership and keeping the Fund engaged. We thank the staff for this important work and appreciate the efforts to move toward more practical advice for the membership on the implications as well as the macro and fiscal policy options to make progress on their climate commitments. The paper provides a good basis for a more systematic quantitative assessment across the membership to help evaluate progress toward Paris mitigation pledges. Equally, it helps visualize the adequacy of mitigation adaptation policies.

We concur with staff that carbon pricing is a powerful market-based instrument, but the menu of mitigation instruments, both pricing and non-pricing, are extensive. Therefore, the optimum mix of measures will have to reflect political economy considerations as well as economic efficiency. As has been stressed by most Directors today, the Fund should play an important role in helping vulnerable countries, mostly small states and LICs, with climate change by building ex ante buffers and ex post instruments. In this context, we look forward to discussing the findings of the paper on building resilience in countries vulnerable to natural disasters.

More broadly, a gradual transition toward a low carbon economy is still possible but will increasingly involve difficult policy tradeoffs as well as require active risk management, including of spillovers. We therefore see today's paper as a good starting point for our activities and believe that our risk-based surveillance framework should increasingly capture climate change risk. Climate change will require enhancing economic, fiscal, and financial resilience as well as significant upfront infrastructure investments. Government policies will be central as regulation, macrofinancial, and tax policies need to adapt to change the behavior and incentives of the private sector. The distributional consequences of the transition could increase inequality and need to be managed. These are all areas which are core to our activities but may need to be more systematically incorporated into our surveillance activities, as has been stressed by Ms. Riach and Mr. Doornbosch. We also agree that this is clearly a departmental exercise.

Issuing a staff guidance note on how to approach climate change in Fund surveillance which focuses on adaptation policies, risk management, and mitigation frameworks where macrocritical will definitely have clear merits. It will also be beneficial to manage stakeholders' expectations of what the Fund can and cannot do in this area given our mandate and limited resources.

Lastly, the national climate commitments are voluntary. Therefore, we caution against turning the stocktaking exercise into a monitoring one. As has been mentioned, the United Nations Framework Convention on Climate Change is and should be the primary international intergovernmental forum for monitoring the global response to climate change, where the Fund obviously has a role to play within its mandate.

Mr. Obiora made the following statement:

First, I would like to appreciate and commend the staff for this important paper and for the innovative ideas they propose therein. During the Board retreat last December, the Chairman expressed surprise that climate matters were not ranked in the top tier of threats facing the global economy. While I am sure this paper relieves her of that surprise, climate change is and will remain a macrocritical issue for the Fund and its membership for a long time to come. Therefore, this issue merits our attention at the highest levels, and given the economic impact of potential effects and scenarios, no one can deny that this impact will be significant and will affect all countries. The impact will also affect many of the core mandates of the Fund, including growth, finance, trade, employment and migration, so it is therefore important that we design and integrate climate-related policies in fiscal frameworks.

We would also like to note that vulnerability to climate change varies across countries and regions considerably, with greater risks for LICs who happen to be low emitters. In view of their reliance on agriculture and tourism, exposures to climate-related natural disasters can significantly reduce growth and worsen poverty in these countries. Variability in temperature has also given rise to more droughts, flooding, and extreme heat incidences. For these reasons, accelerating and intensifying the actions needed for a sustainable low carbon future is crucial but should be applied in a practical manner, bearing in mind some of the regional industry prices.

In recognition of disparities across countries, we call for a careful reconsideration of the proposed price flow. While imposing a minimum international carbon price will represent a clear signal and strengthen mitigation effects across the board, there is need to carefully consider the feasibility of this flow in light of the disparities across countries. Given that dispersion in emissions varies significantly, it may be a challenge to convince signatories to the agreement to settle for a minimum carbon price flow arrangement. Despite the fact that carbon taxes may be an avenue to generate much needed revenue in developing countries, it is important to note that the poor tend to allocate a greater share of their consumption to electricity when compared to wealthy households, thus it is crucial that these factors are considered when applying pricing flows to avoid being regressive.

On integrating climate-related policies in our surveillance toolkit, we support the suggestion made by several Directors about the preparation of a staff guidance note.

Mr. Fanizza made the following statement:

I thank the staff for the paper and also for consulting with us before the meetings. We welcome that very much.

We already issued a comprehensive gray statement with several colleagues, so I will try to keep things short. The carbonization and the shift toward renewable energies has already become a major driver of structural change, maybe the most important thing that is going on at present. As a result of that, when one gets a general-purpose technology like that, the result is grounded assets, costs, and far-reaching implications. What the Fund should do for its members is not only focus on the costs and how to minimize and how to facilitate transition, but the main message should be transforming the challenge into an opportunity to make things better. For LICs, renewable resources can help solve what has been a major issue, one of the last miles along the energy connections. They will change completely the way people get access to energy, and so it also can be an important driver of economic growth and transformation. That is important. That is the spirit we should have.

To what extent should the Fund be involved in the issue? I am all for getting involved, but we know that there are limited resources, so we should be reasonable, and we should adapt the extent of our involvement to the extent to which countries are affected by climate change, but also the extent to which countries contribute to climate change and how much, what is the share of a country's global emissions. We need a differentiated approach.

We are all for carbon pricing as a tool for addressing the issue, and let me stress that the exercise is good. But let us keep in mind that we are at the stage in which tax policies in many countries, even advanced countries, actually provide the wrong incentives. Many countries in Europe still have a heavy incentive to use diesel fuel. That is a bit far away from a devised optimal carbon tax.

Finally, my point is that countries that have significant fiscal space should make efforts to frontload spending for facilitating this transition, such as decommissioning the still-large number of coal energy power plants.

Mr. Moreno made the following statement:

We agree with those who have noted that the Fund has a role to play on climate change. Five chairs have made the case of macro-relevance. There is also the issue of important involvement of finance ministers in the climate change strategy, and we should take advantage of the universal membership of the Fund.

We have issued a gray statement. I will focus on three issues. First, on the Fund's involvement, we will highlight the importance of country specificity. We are talking a lot about LICs. There is a role to play in surveillance but also in capacity building, how to build buffers, resilience strategies for natural disasters. But like the staff highlights, the low-income and low-emitting countries carbon pricing is less urgent. We would rather highlight the importance role the Fund can play with the big polluters in terms of surveillance and in terms of signaling the macro-relevant spillovers for individual economies, but also the positive impact of climate change strategies.

There is a role for the Fund to play in bilateral and multilateral surveillance. The product presented by the staff, the spreadsheet model, is quite cost efficient. It is a very good product and not very expensive, and it should be regularly used in the flagship reports.

Second, on the topics, we will highlight three issues. First, on fiscal policies, we agree that carbon pricing is an efficient tool, but it should be understood alongside other instruments in the climate change strategy. At this stage, we should further explore it as a market-based instrument. We should further explore other regulatory instruments before setting carbon pricing floors or caps. We highlight the important role that the Fund can play in the financial sector, as also highlighted by the Managing Director at the beginning of this session. We sense that there is appetite in the markets for green finance. This is a reality, and there are also initiatives in the private sector. We also stress in our gray statement the role that has been played by the Network for Greening of the Financial Sector, a group of central banks. Some collaboration could be gained there. Like others, we would like to see more of a role for the FSAP in that.

I see some similarities between the FSAP and the issue of climate change. The big polluters, like the big financial sectors, should lead by example. The same way that we have an FSAP for big financial sectors, we should also have an emphasis on greater greening or climate change in the countries that are the biggest polluters in the global economy.

Third, on cooperation with other institutions, we welcome the staff's response that the staff is perfectly aligned with the World Bank, and we welcome that this study can be used in the Carbon Price Leadership Coalition (CPLC).

Finally, like others, I support the proposal to make a staff guidance note, which will be useful.

Mr. Beblawi made the following statement:

We issued a gray statement in which we expressed our support for the Fund's role in helping implement the Paris Climate Strategies in close collaboration with other international organizations given the importance of this issue. The paper presents promising mitigation measures, which should be pursued. The spreadsheet model developed by the staff indicates that carbon taxes or equivalent pricing for fossil fuels can be attractive on CO2, fiscal, domestic, environmental, and economic grounds.

On the adaptation side, we agree with the staff that a holistic strategy going well beyond physical climate investment is needed in vulnerable countries. It is important for the Fund to provide adequate capacity development, development support, to small, low-income, and fragile states in these areas. We also see a role for the Fund in facilitating small states' access to climate change financing.

In light of its expertise, universal membership, and the close relationship with fiscal authorities, the Fund has an important role to play in energy pricing and macro-fiscal policies. We agree that the Fund should monitor the macro and fiscal implication of countries' Paris mitigation pledges in bilateral policy discussion sand look forward to further discussion on this work before proceeding.

We also agree that the Fund could periodically take stock of countries' progress on their Paris commitments, preferably in cooperation with other organizations. We have received comments from our Iraq and Emirati authorities in support of the paper. The United Arab Emirates also shares the countries' comprehensive strategy toward climate change, which we shared with the staff.

Mr. Sigurgeirsson made the following statement:

I thank the Chairman for the opening statement and the staff for a thorough and informative report. I am looking forward to hearing the experts elaborate further on the questions in the gray statements, especially on the

Fund's role and resources. I must admit when reading the report, I was a bit surprised to see the extreme catastrophic scenarios mentioned in the report, but I guess we are in uncertain territory, and they are worth mentioning due to the devastating potential effects. I have issued a gray statement but would like to emphasize a few points.

Climate change is potentially macrocritical at both the global and national level, and we believe that the Fund in cooperation with other international institutions is well placed to support its members in this area. Carbon pricing can be the most direct and cost-effective way of reducing emissions, depending on national preferences and circumstances, and it can be complemented with other policy measures to meet pledges under the Paris Agreement.

Environmental taxes are not always an easy sell, and it is our experience, that the costs and benefits need to be made very public and preferably introduced in a gradual manner. It is also important to weigh and mitigate the distributional equity aspects of the climate-directed policies. That speaks for itself.

There will also be a need to ensure that alternatives to fossil fuels are made available in an accelerated manner, which could require targeted strategic incentives and investments in R&D and also include carbon capture.

The Fund should stress the macrocriticality of climate change action and can play a useful role in supporting countries to integrate the Paris pledges and suggest ways that they can be reached in a timely and cost-effective way without being too prescriptive.

Finally, cooperation with other institutions will be key to ensure efficiency based on each institution's role and mandate. I would also like to mention in closing that we agree with those chairs that have mentioned issuing a staff guidance note.

Mr. Tan made the following statement:

We thank the staff for the insightful report. Like many other Directors, we recognize the potential macrocritical consequences of climate change on member countries, and we agree that the Fund has a role to play in assisting the membership to address the related risks while remaining within its core mandate and in collaboration with other international organizations. We would like to offer a few comments for emphasis.

Firstly, there is a clear need for action on this topic. That being said, fighting climate change will not be painless. Hence, we encourage continuing work to flesh out the benefits and costs of various policy tools in a holistic manner to assist member countries in considering the optimal policy mix that will best address the challenges faced, taking into account country circumstances.

I welcome Ms. Riach's comment not to be too prescriptive in the approach taken, particularly given that it will also be expected that some of the policy goals will conflict with others. The challenge will be in using real data to make the policy tradeoffs more evident and provide a data-based picture of how policy goals interact with one another as we seek to further integrate climate considerations into the Fund's analytical toolkit.

In addition, we join other Directors in highlighting the importance of the financial sector's role in mainstreaming the climate change strategies. Besides the work on fiscal policy tools, further efforts will be needed to assist countries in exploring appropriate policies to mitigate the financial risk of climate change, not just the fiscal risks, but also the transition risks arising from the policy actions in moving to a low-emission economy. In this regard, we see the importance of developing cost-effective adaptation tools to assist low-income and small developing countries in transitioning to climate-friendly measures and welcome the Chairman's comments on this.

Many of these countries are low emitters that face resource constraints for absorptive capacity and limited fiscal space. Finding innovative ways to help these countries build resilience to climate-related risks would be vital. This calls for the Fund to provide strong Ta and capacity building, as well as to collaborate with other international organizations in mobilizing the required financing to assist these countries.

Lastly, there is a close link to the Fund's ongoing work, such as the Comprehensive Surveillance Review and on building ex ante resilience in countries that are vulnerable to natural disasters. As noted by Mr. Doornbosch, we do not see the issue as one of sequencing, as many aspects of this work are iterative in nature, and hence the key is closer coordination between the different workstreams to ensure that the final outcomes tee up in a coordinated manner.

Mr. Ray made the following statement:

Like others, I thank the staff for the paper, in particular the glossary, which we found valuable and would like to see more of.

This chair agrees that climate change is macrocritical, and that is not saying anything that is significant at all, but I will start with adaptation. As Ms. Levonian has pointed out, while small states in particular are the least contributors to the problem, they are some of the most affected, and they have some of the smallest capacity to deal with it. The Fund has a very valuable role to play in partnership with the World Bank, and many members of this constituency value that greatly.

As the paper says, there is a need to take a holistic approach to assisting small countries, and I would add my voice to Ms. Riach's and encourage the staff to look at the costs and benefits of different financing instruments. On mitigation, we should not be surprised if countries choose to adopt a second- or third- or fourth-best policy. That is common. Pushing a particular first-best policy approach, which may well be least cost, may not always be helpful. The important thing is that countries deliver on the Paris commitments, and we agree with those chairs like Mr. Kaizuka and Mr. Gokarn, that it is up to individual countries to decide how to deliver on their Paris commitments.

Like Mr. Tombini, Ms. Pollard, Mr. Kaizuka and others, we remain a bit cautious about the Fund's role. The UN FCCC has a particular role to play, and it is probably not going to be too helpful for someone else to be doing a stocktake. As we said in our gray statement, we are not convinced it is always helpful to focus on individual country cost-benefit analysis in a topic which has global spillovers associated with it. For example, in the paper, it shows that for Australia to mitigate, it has got a negative cost-benefit. I do not think that will help the cause, so we need to think about how to get in the multilateral, global aspect of it.

On the modeling, we did ask some technical questions, and it would have been helpful if we had had the answer before this morning. Modeling the producers' numbers that are way out of line with other modeling exercises such as the recent one from Brookings, makes me nervous because if we had multiple numbers that just looked very far apart, it does not help the political process, and really, that is what we are talking about on mitigation. We are talking about a political process, so we need to be a bit careful.

Even with mitigation, climate change will impact the pattern of economic activity in significant ways, particularly in the southern hemisphere.

For example, fish will swim in different parts of the South Pacific Ocean than they currently do. That will have different implications for different members. The pattern of activity in continents in the southern hemisphere will change, and the Fund does have a role to help members think through what those really big changes will be, and they are very hard to model.

Lastly, I would add this chair's voice in favor of a staff guidance note. It would be helpful to make it clear what the Fund is going to do in different circumstances.

Mr. Gokarn made the following statement:

We thank the staff for an excellent paper and effective outreach, and also thank the Chairman for her opening remarks. We issued a gray statement, but we would like to emphasize a few points.

First, as many Directors have noted, we believe the Fund has a significant role to play in this process, but it is also a very bounded role, and we think those boundaries should be recognized and closely adhered to. The ability to analyze the macro impacts or fiscal impacts of different mitigation strategies is an important contribution the Fund can make, but the standardization that may be a reflection of surveillance approaches or, in particular, the recommendation that a flat tax or a carbon pricing floor be imposed is outside these boundaries. We see the core principle of the Paris Agreement as being national determination. It is countries volunteering to contribute to the mitigation process, and this means taking into account a whole range of national considerations, economic factors, political factors, other factors. This is not something that is amenable to a standardization process, and we believe that should determine the boundary of what the Fund does. It is important, but we should be careful about venturing beyond these boundaries.

On the flat carbon tax recommendation, we see in the analysis that it clearly is a superior option to most other options, perhaps all other options in most countries, but the relative efficiency of this mechanism is very different across countries. I felt that grouping countries in geographic terms was not an efficient way of presenting it, so I would suggest that a point be made that groupings have to be reconsidered, and differentiation needs to be taken into account. In fact, one way of grouping would be on the basis of NDCs, what different countries have agreed to, and this may be correlated with the level of development, per capita income, and so on, which might allow for more insightful analysis.

From the Indian perspective, we have a number of instruments in place which could be considered carbon taxes. For example, we have a flat unit tax on coal, which is now about US$25. We have taxes on petroleum products as well, but this is determined by domestic considerations. It would be difficult to visualize a formula coming from outside asking us to impose these taxes. In this context, we have some concerns about the statement in paragraph 20, which relates to India and says: In India on the other hand, burdens on low-income households are relatively smaller due to the limited access to electricity and vehicle ownership.

This is an aspirational development. We want more energy. We want more secure energy, and we want people to be more free to move. One cannot impose this constraint and say this will change the burden, because the burden will keep mounting over time, so we would request that this paragraph be reframed.

The third issue I want to highlight is about market power, and we will be talking about market power in the World Economic Outlook (WEO) context a few days from now. It is an important work agenda for the Fund, and in this context, I referred specifically to the key value amount, where the new technologies that will be implied by the amendment are all owned by a small set of companies in advanced economies, so implementation of new technologies which will be critical to mitigation strategies will be affected by market power pricing, access. All of these issues are important elements in this workstream, so I would just like the staff to take account of that.

Mr. Jin made the following statement:

I thank the staff for the insightful report. In terms of fiscal policy and its impact on climate change, this is a professional and in-depth analysis. This is helpful for the fiscal authorities of the member countries to realize their responsibilities, capabilities, and possible contributions to control climate change. Fighting against human-induced excessive climate change requires a comprehensive strategy and response, and fiscal and tax policy are important but not the only instruments. Technical standard setting, reforestation, the use of new technology, the investment in low- or no-carbon emissions energy, are all possible effective measures. In fact, between 2005 and 2017, China’s carbon intensity has dropped by 46 percent, fulfilling its Paris commitment three years ahead of schedule. This has been achieved by a combination of fiscal and non-fiscal measures. If we assume that the burden of emissions reduction has to fall entirely on carbon taxation, the implied desired tax rate could be much higher than that under a much more comprehensive approach, so the Fund can use its expertise to help member countries assess costs and benefits of different emission reduction methods, but refrain from using the bilateral surveillance as a tool of enforcement of the Paris Climate Strategies.

Carbon tax flow requires a high level of international consensus and has to be carefully evaluated. I also echo Mr. Kaizuka's and Mr. Gokarn's concern about the related paragraphs.

Mr. Mojarrad made the following statement:

Comprehensive and well-designed carbon pricing for climate mitigation has merit on economic and environmental grounds, with revenues used to lower distortionary taxes, replenish general funds, and increase environmental spending. It could be part of a broader reform of energy prices and should be accompanied by well-targeted social safety nets to protect the vulnerable. However, given political economy considerations, we agree that it might be useful to settle for second-best mitigation instruments, including regulation and rebates, which do not raise energy prices. This might be especially relevant for resource-rich countries given the public expectation for relatively lower energy prices and the perception that carbon prices create prejudice against these countries, as indicated by Mr. Mouminah.

We welcome the spreadsheet tool developed by the staff to help countries evaluate progress towards their Paris mitigation pledges. Given the question raised by several chairs on the methodology used to analyze mitigation policies, further refinement of the analytical model might be needed. We also see merit in concrete policy actions by the UN agencies for international transportation to implement the announced mitigation objectives while putting in place comprehensive schemes for vulnerable states. As mentioned by many other chairs, the small islands and LICs face significant financing and capacity constraints to adapt to climate change and build resilience to natural disasters.

We agree on the need to build effective fiscal institutions, develop capacity in fiscal and debt sustainability analysis, mobilize official and private financing, match financing with investment objectives, and fully integrate financing into fiscal policy frameworks.

The joint Bank-Fund CCPA and the Fund's Public Investment Management Assessment (PIMA) provide useful insight on resilience building and should be extended to all climate-vulnerable small islands and LICs.

Finally, the Fund's work on climate change at the country level should be guided by the test of macrocriticality focused on the Fund's mandate and areas of core competence, and should leverage expertise from other international financial institutions (IFIs), including the World Bank. The authorities' engagement with the Fund on climate change issues should be voluntary, and discussion of Paris mitigation pledges in Article IV reports should not create any new obligations for the membership.

The staff representative from the Fiscal Affairs Department (Mr. Keen), in response to questions and comments from Executive Directors, made the following statement:[5]

I thank Directors for the helpful and interesting discussion and gray statements. I will pick up some of the general themes that have emerged.

First, on the issue of instrument choice, we take the point that while it is generally recognized that carbon pricing is first best and helps to catalyze innovation, finance, and so on, nonetheless political economy and sometimes practical considerations point toward use of other instruments, and I believe we tried to be sensitive to that in the paper. We do recognize and talk about other instruments. For example, we do note that in many countries a coal tax will go a long way toward an effective carbon tax. We also discuss tax-subsidy schemes that may help to change incentives in a good way. While not quite as efficient as carbon pricing, these may nonetheless create appropriate incentives without such an impact on prices to consumers. We also recognize there are important non-price instruments for mitigation. Sometimes those have indirect fiscal implications, but clearly in our future work, we plan to think more about those issues.

While the paper presents a general spreadsheet tool, we try to be conscious of the country specificity of all these issues when it comes down to actual advice and policy discussions. We do take into account distributional considerations, and the paper gives some examples. Clearly there is more to do in terms of figuring out, for instance, how the compensation might work in particular country contexts. The point that a number of Directors made about ensuring access to energy is an important one, and that will also bear on the work we do on achieving the Sustainable Development Goals (SDGs).

We recognize there is more to do in these areas, and some of these we will take up in the October Fiscal Monitor which will focus on climate issues. We look forward to taking up some of the political economy concerns and

[5] Prior to the Board meeting, SEC circulated the staff's additional responses by email. For information, these are included in an annex to these minutes.

analytical issues that have been raised. Mr. Parry will comment further on the latter.

A second general theme was our rather unfortunate choice of words in talking about stocktaking. To be clear, we certainly are not proposing that the Fund have any role in measuring emissions relative to commitments or anything like that. What we have in mind is the kind of exercise we indicate in the paper. This would not be an accountability or even a monitoring exercise. It is a matter of engaging with countries on the fiscal options and plans that they may have in mind. We certainly do not see ourselves as holding anyone's feet to the fire. That was probably just an unfortunate, somewhat ambiguous choice of wording in the paper.

This leads to the question of the inclusion of climate issues in surveillance. In the multilateral context, our sense is that Directors found the exercise in this paper useful, and this is something we would have in mind to repeat periodically. We are not sure if it would be best to do this annually or every two years, but we take away that there is some support for this approach.

In the bilateral context, I would stress that we do not have in mind a big bang. We have in mind a ratcheting up, maybe systematically focusing on cases where this is macrocritical, as Directors have mentioned and, where the Fund really has something to contribute, in countries that will value the help that the Fund can provide in terms of the fiscal policy options we have been discussing here. We are thinking of some kind of coverage, maybe a box in three to five countries a year.

As was also noted, we see this as a natural extension of the work that the Fund has been doing on energy subsidies for many years. It is technically quite a similar issue, one with which many Fund staff are broadly familiar and can easily get fully up to speed.

We see the spreadsheet tool as providing an initial big picture that, brought to country level, provides a starting basis for a conversation to get into the country specifics. It is also worth mentioning that we have had engagements on these issues in Article IV consultations before—India, the European Union, China, and the United States some time back. The idea is to ratchet up, maybe in a more systematic way.

In terms of the resources all this requires, we are conscious that we work within an envelope. We believe that the kind of reallocation that may be required is relatively modest. We have incurred a significant amount of upfront costs in developing the spreadsheet tool, and now there is a need to refresh and maintain that. As I just described, we have fairly modest coverage in mind as an extension of the work that is already done.

There is also the CCPA work, which is an important project for the Fund and the World Bank. From the Fiscal Affairs Department (FAD) perspective, we have some flexibility in offering one-off support to area departments for countries that wish to engage in depth on these issues. Of course, TA requests would be accommodated with the normal processes we have.

Having said all that, our sense is that this is not an issue that will go away and that we do operate pretty much on a shoestring. We have only Mr. Parry and Mr. Davies, and only Mr. Parry full-time, on these issues. As we look ahead, we see that this is not an area that will get smaller. For the moment, we are thinking along the lines I just described.

In terms of collaboration, we are conscious that FAD and the wider Fund are niche players in the huge exercise of addressing climate issues, but we believe it is an important niche. Collaboration has two dimensions.

One is with external partners. I believe we have quite good relations with a number of those active in the area—the United Nations Environment Program, the World Bank, and the OECD, albeit a little less recently.

Our work on mitigation has been widely recognized. We have leveraged limited resources to make quite a mark, and it is recognized by our partners. Nonetheless, there is certainly more that we can do in terms of engaging with the external IFIs and others to perhaps be clearer on where we think we can contribute. But, to emphasize, we do not see anybody really doing what we do, and what we have the potential to do, and that is widely recognized.

Internal collaboration is probably no less important. Though the paper is primarily a FAD exercise, we recognize that, within the Fund, climate is not just an issue for FAD. In fact, MCM, RES, the Strategy, Policy, and Review Department (SPR), and area departments all have an interest in this area. We did have, a few years ago, an active advisory group on climate issues to help coordinate across the departments. That has slightly fallen into abeyance, but there is a form of a grassroots support for work on climate within the Fund: a voluntary group of staff meet periodically to discuss climate issues. We believe there is certainly a case for reviving this advisory group. In that context, we also take to heart the suggestion of a guidance note. That is an interesting idea. We have some more legwork to do internally before we are in a position to deliver that, but that may be a good organizing framework.

I would now like to touch on one of the technical issues before handing over to my colleagues, and that is the question related to border carbon adjustments and how they relate to the minimum floor idea. It is true that 3,000 economists do endorse border carbon adjustments, but they do so in more than three or so lines, I am not sure if that point has been fully thought through. We have a different perspective. We certainly recognize, in principle, that in second-best terms there is an efficiency case for border carbon adjustments of some type, and we have written on that. But we are conscious of practical problems involved, even leaving aside issues relating to World Trade Organization rules. How does one deal, for example, with non-price instruments? That is just one of a wider set of practical issues. One merit of the minimum tax idea, which I should stress could be operated on a regional basis at some level, is that it tends to cut through these issues by providing developing countries with some assurance that they are not completely shooting themselves in the foot in terms of their competitive position by implementing some form of carbon pricing.

The staff representative from the Fiscal Affairs Department (Mr. Parry), in response to questions and comments from Executive Directors, made the following statement:

There are some questions about what were the main limitations or caveats to the mitigation analysis, and one is that we do not look at capital dynamics, the gradual turnover of vehicle fleets and so on, which would dampen fuel price responsiveness in the near term. Another is that we are not looking at international trade impacts. Also, at the moment, we are not looking at economy-wide employment effects or changes in GDP from mitigation policies. Another caveat is that we do not look at possible changes in international energy prices from mitigation at the global level. But at least there are other models that are dealing with these issues that we can draw on, and in some cases, it might be quite practical for us to factor some of these complications into our model through extrapolation. it might be feasible for us to extrapolate GDP effects, for example.

There are a variety of other factors that are not explicitly taken into account in our model, such as general equilibrium price changes, upward sloping supply curves for fossil fuels, details on emerging technologies. But so long as the fuel price responsiveness in our model is consistent with that in other models that do take these complications into account, then that is entirely reasonable. We try to be careful looking at other studies and examining what is the bottom line in terms of emissions and fuel price responsiveness that comes out of these models to make sure our streamlined model is broadly replicating these responses.

There was one question about the Brookings study. I have not looked at that in detail yet, but sometimes one has to be careful looking at other studies because they make unfortunate assumptions. I know some models, for tractability reasons, impose that all fossil fuel price elasticities are at unity, but we think that is unreasonable. Our fuel price elasticities are typically between about 0.5 and 0.8. That is something I need to look at and maybe respond bilaterally about the Brookings study.

As regards our future work, we plan to extend the coverage of countries. At present, we have 135 countries in the spreadsheet. Many of the missing ones are small states, so we plan to collect fuel use data on small states to expand the coverage of countries. We plan to extend the coverage of emissions sources to cover some of the small-scale sources like emissions from cement production, fugitive emissions from extractive industries, and so-called fluorinated gasses. We believe it is feasible to integrate those into our analysis. We also plan to look at a broader range of mitigation instruments in the future, for example, incorporating incentives for renewables. The discussion today has underscored the importance of looking at combinations of policies, for example, to what extent some modest pricing might be combined with energy efficiency regulations. We need to pay more attention to what combinations of policies might work for different countries.

One final point is that we would like to develop a fairly simple tool for estimating the public and private investment needs that are implied by mitigation pledges on a country-by-country basis. We believe that is quite practical to do by extrapolating from other groups which are looking in detail at investment needs at the global and regional level. For example, this information will allow us to compare public investment needs for mitigation with potential revenues from carbon pricing.

The representative from the Fiscal Affairs Department (Mr. Davies), in response to questions and comments from Executive Directors, made the following statement:

I would like to pick up on some of the issues raised about climate change policy assessments and related TA and capacity development, given the discussion about extending the coverage of climate change policy assessments. This is an important subject as we are nearing the end of the pilot we have done four countries, and expect to do two more in the remainder of this year. Assessing that pilot and taking stock of where to go forward will determine how coverage is extended. A key part of that is discussing with the World Bank and formalizing the status and the role of the World Bank in this process because the skills that the World Bank staff bring to the CCPAs are crucial. Once we finish the pilots, once we finish the discussions with World Bank colleagues, and critically following the Board discussion on resilience to natural disasters, that will be the right point to take stock of how and when the CCPA goes forward.

There were some questions around how the CCPAs facilitate access to climate finance. In and of themselves they do not grant access to any sort of climate change financing; but by giving a concise description and assessment of countries' overall climate strategies and plans and assessing the financing needs and the financing gaps, the hope is that they will assist countries in their discussions with the large array of climate change financing providers. For instance, as will be discussed in the Board paper on resilience to natural disasters, many forms of donors will want some assurance that the disaster strategies of countries are valid before they actually provide upfront financing for them.

There was also some discussion PIMAs and extending their coverage across vulnerable countries. Again, like CCPAs and all the rest of the Fund's capacity development, these are a strictly voluntary part of our capacity development program. There is already quite a large coverage. We have already covered around 60 countries, and we are expecting that to increase significantly over the coming years, but there is no plan to apply them across the board.

I would note that CCPAs do a sort of light PIMA analysis. Whenever we do a CCPA, we look into the public investment management systems. I would also note that the Fund's centers in the Caribbean and the Pacific, the Pacific Financial Technical Assistance Center and the Caribbean Regional Technical Assistance Center, have been getting much more interest and demand for work on public investment issues and that they have been responding. We expect to be able to bring the countries from those two regions together to talk specifically about infrastructure investment and resilience over the coming year.

Finally, there was a question around capacity development on emissions reduction, and while clearly that is not the mainstay of the Fund's capacity development program, and many other institutions have more expertise there, we have worked with a number of countries, including in the CCPA context, on carbon taxation. St. Lucia is thinking about implementing a carbon tax following the CCPA there last year; and as a number of Directors mentioned, Fund capacity development has for a long time helped countries address energy subsidies issues.

Mr. Ray made the following statement:

I was going to start with a general observation on the staff's comments which were particularly valuable and I wondered whether the staff would be able to circulate the notes that they used because I found them particularly useful.

I also wonder about what Mr. Keen stated was an unfortunate use of the word "stocktaking," and clearly many chairs reacted to that, and I wonder whether the staff might want to think about that word before settling the final draft of the publication. That would be consistent with the Transparency Policy.

Finally, on the modeling, we would be delighted to have some bilateral discussion because for us the land sector is very important, for example, and non-carbon dioxide greenhouse gas emissions are very important in this context.

The Chairman made the following statement:

I have noticed that Mr. Keen speaks from sketchy notes, but thanks to our great stenographer, we will be able to do that and to communicate the notes.

On the issue of the use of the word "stocktaking," I believe the Transparency Policy allows us to actually do that, so I think the refinement that Mr. Rau described should be conveyed into the paper. As to Mr. Gokarn's request for some modification, we need to check with SPR and the Secretary's Department to see whether the changes his is proposing would actually comply with the policy. It needs to be factual related to be acceptable. We will double check on the proposed changes.

Mr. Doornbosch made the following statement:

> I would just like to come back to the way of integrating climate change considerations in bilateral surveillance. I agree, I cannot judge the sketchy notes of Mr. Keen, but he also is a bit under-cooled in the way he describes the ratcheting up of this exercise in bilateral surveillance. He says it will be limited three to five countries a year, but if I look around the table it is mostly staff from FAD sitting here. We really need to hear from SPR. I am sure they will be involved in the guidance note. We also need to hear from MCM as well. We should think bit harder about how to integrate these type of considerations in bilateral surveillance, and I agree that it is voluntary. It is not a mandatory exercise. This is something we need to think through better.

Ms. Levonian asked if there would be an opportunity to provide comments on the press release.

The Chairman responded in the affirmative.

Mr. Mouminah asked whether Directors would have a chance to review the revision of the press release to see whether his comments had been incorporated.

The Chairman asked whether the staff would follow up bilaterally with Mr. Mouminah.

The representative from the Fiscal Affairs Department (Mr. Davies) responded in the affirmative.

Mr. de Villeroché agreed with Mr. Doornbosch that the staff could be more ambitious and not limit itself to three to five countries given the broad consensus in the Board on the importance of climate change issues. He remarked that given the long-lasting nature of climate change issues, future Article IV reports could devote a paragraph to climate policies, similar to the treatment structural issues received in Article IV reports.

Mr. Moreno associated himself with Mr. Doornbosch and Mr. de Villeroché. He remarked that his chair had requested a Staff Discussion Note, so he believed these concerns were applicable to more than three to five countries. He also stressed that he did not feel uncomfortable with the meaning of the word “stocktaking” and that the Fund should have a role in signaling that climate issues were important, particularly in big countries.

The Chairman noted that her understanding of the staff’s intervention was the Fund would not be involved in measuring progress toward Paris commitments, but that it could certainly play a signaling role.

Mr. Palei made the following statement:

We greatly value the staff's work in this area, and the Fund did make many significant contributions over the past years and in the recent past as well. The staff made important comments on the initiation of the pilot in this area and that soon we might take stock of the results of this pilot and reflect on the effectiveness of various forms of engagement. We look forward to this work. We believe that it is not the only appointment the Fund had over the past years. It is related directly to the balance between core and non-core areas or macrocriticality, and there are still ongoing discussions, as the Chairman noted. We believe that the results of this pilot, the associated conclusions and how, if any, adjustments in surveillance can be made should be part of the Comprehensive Surveillance Review. There are many moving parts here, and it would be useful for us to take a look at them at the same time.

The following summing up was issued:

Executive Directors welcomed the opportunity to consider the fiscal policy implications of implementing the Paris Agreement and how the Fund might help its members meet their mitigation commitments and support those vulnerable to climate risks. They agreed that the Fund has an important role to play in advising its members on fiscal policies to address climate change and its impacts.

Directors welcomed the tool presented in the paper for analyzing policy options for implementing mitigation commitments. They saw it as helpful in assessing, on a country-by-country basis, the effectiveness of alternative policies in reducing emissions, as well as their fiscal and economic impacts.

Directors broadly recognized the potential of carbon pricing in effectively reducing emissions and mobilizing revenue resources. Directors noted, however, that other fiscal instruments or regulatory measures could also have an important, and sometimes preferable, role to play, depending on country circumstances and preferences. They agreed that countries' policy choices would need to take into account various aspects, including efficiency, distributional, and political economy considerations. In this context, some Directors observed that member countries should have discretion to decide and implement policy options as they see appropriate. Directors considered that further analysis of the full range of mitigation instruments would be important to better inform the debate. They also noted that research and development (R&D) and investment in new energy and efficient technologies could play an important role in mitigation efforts, while measures would be needed to relieve vulnerable groups. Regarding carbon price floors, many Directors thought that such arrangements among willing countries could reinforce the Paris process, but some other Directors did not see merit or feasibility in this approach.

Directors emphasized the importance of a holistic approach to promoting resilience in countries vulnerable to natural disasters and climate risks in collaboration with the World Bank and other relevant international organizations. They underscored the need to incorporate ex-ante resilience-building in macro-fiscal and financial frameworks, including through fiscal buffers and climate finance. Directors also encouraged the Fund to work with donors and multilateral development banks in exploring affordable financing options for adaptation investments, especially for low-income developing countries. Continued Fund advice on cost-effective adaptation policies and capacity building support in these countries, particularly small states, would be important to help address policy gaps and unlock financing from all possible sources.

Directors recognized that the national mitigation commitments and resilience challenges could have macro-critical implications, and that the Fund is well-positioned to support countries in analyzing the fiscal and financial impacts of their policy choices. In this context, many Directors supported the inclusion of the economic implications of countries' mitigation policies in Fund surveillance. A number of other Directors, however, stressed that the Fund should avoid standardizing such analysis and discussions, and allow individual member countries to decide on the mode of engagement with the Fund in light of their specific circumstances.

Many Directors agreed that staff could periodically update the analysis of the impacts of alternative mitigation policies using the tool staff had developed for cross-country analysis. A number of Directors, however, cautioned against regular formal update exercises that could go beyond the Fund's mandate. Directors emphasized the importance of continued close collaboration with other international organizations active in this area, based on each organization's mandate and comparative advantage, to ensure that the Fund's work remains complementary to that of others. They also stressed the importance of ensuring close alignment of the different aspects of work undertaken by the Fund in this regard.

A number of Directors saw merit in developing a staff guidance note on how to approach climate change in Fund surveillance, focusing in particular on adaptation policies, risk management, and mitigation frameworks.

APPROVAL: April 24, 2020

JIANHAI LIN
Secretary

Annex

The staff circulated the following written answers, in response to technical and factual questions from Executive Directors, prior to the Executive Board meeting:

Analytical Approach

1. ***It might be a useful exercise to group countries in terms of these two attributes, generating "strategic clusters" of countries across regions. Could staff comment?***

- Grouping countries with similar characteristics in terms of the price responsiveness of emissions and the relative effectiveness of different policy instruments would be a very useful future exercise and is easily done within the modelling framework. It would help authorities understand which other countries may provide the most valuable lessons in terms of experiences and best practices for designing mitigation policies.

Mitigation measures

2. ***We wonder whether the effect of a price floor can be calibrated through border carbon adjustments (BCAs), which have been endorsed for this reason by over 3000 US economists. Staff's comments are welcome, as staff suggests that BCAs have limited effectiveness.***

- Staff will respond to this question during the Board meeting.

3. ***Staff's elaboration on setting a common floor price and on how to ensure flexibility under countries' mitigation pledges would be appreciated. At the same time, we would also appreciate comments on how the carbon tax and the Emission Trading System (ETS) could complement each other, particularly in regions that already have a working ETS.***

- Under a carbon price floor arrangement, countries would be free (as provinces and territories are in the Canadian scheme) to meet the requirement through carbon taxes or ETSs—in the latter case, emissions caps might be scaled such that the expected allowance price is at least equal to the required floor. Countries would be free to exceed the floor price, for example, if this is needed to meet their mitigation pledge. An independent body could be tasked with monitoring the price floor, for example, to develop conventions to account for sectoral exemptions from formal carbon pricing or changes in pre-existing energy taxes. ETSs are usually imposed downstream on power generators and large industry and, therefore, do not cover emissions from transportation and buildings. They have been combined with carbon taxes for sources outside of the ETS, for example, in Sweden and Ireland. In other cases, for example the UK, an ETS has been combined with a variable carbon tax such that the combined prices from the two instruments meet a target level.

4. ***We wonder if even taking into consideration these additional expenses, carbon tax could have a most desirable effect on the country's fiscal position. Could the staff comment?***

- Some of the revenue from carbon taxes can be used to compensate vulnerable groups like low-income households both to avoid regressive effects and improve political acceptability. Most of the burden of higher energy prices is however born by higher income groups so it only takes a minor fraction of the revenues from carbon taxes to compensate low-income households. For example, according to staff estimates using FAD's spreadsheet tool, input-output tables, and household expenditure surveys, staff estimate this fraction (for a $35 per ton carbon tax in 2030) at 5 percent for India, 8 percent for China, 11 percent for Canada and 13 percent for the US.

5. ***Mitigation strategies addressed in the paper, be it carbon pricing or emissions trading systems, should be comprehensive and well designed, with the revenues used widely, including for funding productive investments for SDGs. However, both instruments have fallen short in meeting these criteria in practice. Considerable differences exist in the use of revenues generated by these two schemes in lowering distortionary taxes and in increasing environmental spending. Could staff elaborate on the reasons behind such wide variations?***

- The reasons are not fully understood. But a potential explanation is that emissions trading systems are administered by environmental ministries and it may be more likely that any revenues from auctioning allowances are retained within the ministry for environmental spending. In contrast, carbon taxes—which are generally extensions of existing fuel taxes—are administered by finance ministries and it is perhaps more natural for the revenues to be used for general purposes like lowering other taxes or funding general public investments.

6. ***We note likely substantial efficiency gains from some degree of price coordination to enable the same reduction in global emissions to be met at a smaller global cost and wonder if large-emitting countries have expressed willingness to coordinate price floors by transferring mitigation outcomes (ITMOs) across national governments, as foreseen in the Paris Agreement. Staff comments are welcome.***

- To our knowledge, the possibilities for carbon price floor arrangements among countries, and for trading ITMOs at a government-to-government level under such arrangements, have not yet been discussed in international dialogue over the Paris framework.

Methodology

7. ***Could staff comment on key limitations of the modeling exercise?***

- Staff will respond to this question during the Board meeting.

8. ***The Fund's macroeconomic analysis will have an important role to play in assessing the monetary, fiscal, balance of payments and financial sector implications of alternative policy mixes. This is a role that is mentioned in the paper. Could staff comment on whether the modeling capability as it now stands can effectively address this requirement?***

- Staff will respond to this question during the Board meeting.

9. ***Could staff indicate how the analytical framework laid out in Appendix 3 will be able to value the efforts made by developing and emerging countries towards energy transition, beyond the emphasis put on carbon pricing and ETS?***

- Staff will respond to this question during the Board meeting.

10. ***Could staff indicate how further refinement of the analytical framework laid out in Appendix 3 could incorporate the mitigation policies' endogenous effects on economic growth and job creation or whether another model could be used to take these issues into consideration?***

- Staff will respond to this question during the Board meeting.

11. ***There may be some areas of the Fund's methodology that may need further reflection to ensure climate change modelling is comprehensive. These include modelling future abatement opportunities from changes in technology, general equilibrium effects, abatement opportunities outside of CO2 and more holistic welfare measures. Could the staff comment?***

- Staff will respond to this question during the Board meeting.

Role of the Fund

12. ***It would thus be desirable for the IMF/World Bank Climate Change Policy Assessments to facilitate access to climate change financing. Staff's comments would be appreciated.***

- Staff will respond to this question during the Board meeting.

13. ***We would welcome staff's comments on how the carbon-pricing initiative inserts into the World Banks's initiatives, including the Carbon Pricing Leadership Coalition (CPLC), and the Partnership for Market Readiness (PMR).***

- The World Bank is supporting three main initiatives on carbon mitigation. These are: (i) the CPLC which brings together leaders from across government, the private sector and civil society to share experiences on carbon pricing; (ii) the PMR which provides support to prepare and implement climate change mitigation policies—including carbon pricing instruments—in order to scale up emissions mitigation; and (iii) the Finance Minister Coalition for Climate Action (to be launched at the 2019 Spring Meetings) which supports a leading role by Finance Ministers in tackling climate change through fiscal policy and other instruments under the ministry's public finance mandate. The Fund is a strategic partner of the CPLC, the MD participates in its annual High-Level Assembly, and the CPLC could be a useful vehicle for disseminating the Fund's climate work. Fund staff have participated in CPLC and PMR conferences and in the Sherpa meeting for the Finance Minister Coalition.

14. ***We wonder whether the Fund is best positioned to undertake this role relative to other organizations, such as the United Nations Framework Convention on Climate Change (UNFCCC). We would welcome staff's comments on this.***

- Staff will respond to this question during the Board meeting.

15. ***Given that the demand for support from the Fund on climate change issues, including on capacity development, program work, and surveillance will increase in coming years, entailing higher resource implications, we are wondering how the increase in demand will be accommodated within the existing resource envelope.***

- Staff will respond to this question during the Board meeting.

16. ***We agree for the Fund to monitor the macro and fiscal implications of countries' Paris mitigation pledges in bilateral policy discussions and look forward to further discussion on this work before proceeding. Can staff comment on whether we have the adequate resources for the envisaged work?***

- Staff will respond to this question during the Board meeting.

17. ***Staff comments would be welcomed on the estimated implications for the Fund's resources associated with the proposed activities.***

- Staff will respond to this question during the Board meeting.

18. ***To the extent possible, we would favor that staff prepare a paper on an annual basis to update the Board about developments in this area, including the progress made in implementing Paris Climate Strategies. We would appreciate staff's comments on the resource implications of this initiative.***

- Staff will respond to this question during the Board meeting.

19. ***Could staff clarify what is meant by "taking stock" in this context? If the narrower role is what is envisaged, we would see that as being reasonable, but would like to see a template of what the report would look like.***

- Staff will respond to this question during the Board meeting.

20. ***The methodologies set out in the paper can be useful, but the role of the Fund in the labor and time intensive stock taking exercise, in our view, is limited. Other international institutions with more experience are better placed to do this work. In this regard, we would appreciate if staff could clarify what is meant by the indication in the Issues for Discussion that "the Fund could usefully take stock of countries' progress on their Paris commitments"?***

- Staff will respond to this question during the Board meeting.

21. ***We note significant capacity gaps in small developing states (SDS) and LICs, welcome joint Bank-Fund climate change policy assessments (CCPAs) conducted thus far and appreciate staff indicating if and when CCPAs and public investment management assessments (PIMAs) would be extended to all climate-vulnerable SDS and LICs.***

- Staff will respond to this question during the Board meeting.

22. ***We encourage the Fund to actively provide technical assistance to low-income and fragile countries to help build capacity in emission reduction and formulate adjustment strategies. Could staff elaborate more on the TA that has already been provided in this respect and their effectiveness so far?***

- Staff will respond to this question during the Board meeting.

Other comments

23. ***We note the substantial gap between the funds pledged by AEs and the initial investment needed by DCs over the next decade and wonder if this gap could realistically be filled by new revenue mobilized by carbon pricing or other sources. Staff may wish to comment.***

- Staff will respond to this question during the Board meeting.

24. ***We encourage staff to do more research on how to better leverage the financial sector in this regard, including in terms of supportive policy measures. For example, accepting eligible green bonds as collateral for central bank monetary operations could potentially increase the attractiveness of these bonds, and in turn, promote the development of green finance. Could staff share on possible policy measures that can facilitate the development of green finance and complement efforts to tackle climate change?***

- On financial sector issues, a flagship tool that we have is the Financial Sector Assessment Program (FSAP). The FSAP has been quite useful for delivering in-depth analysis of financial stability risks, financial sector oversight frameworks, and financial safety nets. Fund staff's focus within the FSAP is on financial stability, and in that context, staff have covered climate-related risks when relevant in stress tests. Staff have been working on upgrading our stress testing for climate-related risks, broadening the scope beyond nonlife insurance and integrating them more closely with other macro-financial analysis. Staff have liaised with leading central banks and other agencies to improve our understanding of the macro-financial transmission of climate-related risks. On financial sector development issues—such as developing green bond markets—we have been coordinating with others, in particular World Bank colleagues, who have been taking the lead (the FSAP is a joint Program with the World Bank). The upcoming Review of the FSAP in 2020 will provide an opportunity to examine the scope for coverage of issues such as climate.