

East Asian Approaches to Climate Change and Economic Integration

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Introduction: Unsettled Issues and Further Shifts

During the last decade, the world has seen a sharp increase in global attention to environmental challenges, especially climate change. Countries in East Asia, and China in particular, have become active participants in climate change discussions. Many countries have made commitments to move ahead with the Paris Agreement to implement nationally declared contributions to control CO₂ emissions—and to advance a clean energy future.

Within this same period, while global efforts in the World Trade Organization have stumbled, regional efforts for economic integration have redoubled. Perhaps the most advanced open market initiative is within the Association of Southeast Asian Nations (ASEAN), with its Economic Community and the “ASEAN+1” agreements with each of its key regional partners. The region is also involved in recent and ongoing efforts with a wider geographic scope, as represented by the Regional Comprehensive Economic Partnership and the Comprehensive and Progressive Trans-Pacific Partnership.

Beyond economic instruments, there has been a growing need for practical integration of infrastructure to connect the region and help to pave the way for industrial growth and economic development. Multilateral banks and official development assistance have been longstanding actors in this space, but the potential for physical connectivity came into sharp focus when the Chinese pushed ahead with the Asian Infrastructure Investment Bank and the Belt and Road Initiative. While these initiatives are different from economic integration and free trade agreements, they promise to develop connectivity in addition to other facilities that can provide national development and a practical backbone to regional integration.

Though the international community has made steady progress in economic integration and with regard to climate change action, efforts to bridge the two sets of issues have not kept pace. The concept of sustainable development—whereby development not only incorporates environmental protection, but also brings in social considerations in tandem with economic growth—is now accepted by many, if not all, governments. But the connections between economic growth, investment, trade, and environmental protection remain unsettled and controversial in policy and politics, generating headlines and street protests from time to time.

Against this background, this paper considers Asian approaches to the relationships among economic integration and the environment, climate change, and sustainable development. I begin by mapping the key environmental concerns that relate to trade and surveying the emerging attitudes of governments across Asia. In particular, I note that Asian countries have often been on the opposing side of environmental safeguards and sanctions imposed by Western governments. Second, I look beyond the World Trade Organization and consider how regional free trade agreements seek to deal with environmental issues. There remains neither a single regional institution, nor an agreed and effective regional approach to address such issues. Even within the ASEAN Community, environmental concerns tend to be kept separate rather than linked and integrated. Third, and briefly in conclusion, I suggest that the approach will need to shift from trade to a deeper look at economic integration. Moreover, cooperation and assistance—rather than market access restrictions and sanctions—will be the more acceptable and effective approach in Asia. Only then might environmental and climate change concerns be pursued in tandem with economic growth.

Shifting Asian Concerns

Many developing countries in East Asia have been laggards on environmental issues and climate change.¹ Quite routinely, Asian governments have cited development needs and North-South divides to emphasize the priority of economic growth, often ignoring clear evidence of environmental damage. Leading up to the Bali conference on climate change in 2007, many Asian countries were reluctant to participate. Today, however, a number of East Asian countries have begun to respond to environmental issues, with a clear emphasis on climate change. Looking at renewable energy, Asia accounts for about two-thirds of new capacity installed globally.² China has demonstrated visible leadership on climate change as the Trump administration has reversed the tone of American climate change policy. Beginning as laggards, Asia is now moving to lead the transition to a clean energy future.

What explains this dramatic shift in the attitude to the global environmental agenda? Demands for a rising Asia to take more responsibility in the fight against climate change certainly plays a part. This call to action is key to note because the global regime on climate change has become more accommodating to the diversity of response strategies, better incorporating the concerns of developing countries. However, international statements and political pressures only account for part of Asian initiatives on climate change. The more effective demands have come from the production and value chains gains that link East Asia to global markets. Just as important, the changes have been driven by growing climate change awareness in Asia and among its people. Communities in East Asia, in response to visible and too often disastrous environmental harm, are no longer willing to trade environmental concerns for economic growth. They reject this false dichotomy, and instead demand economic growth *and* a healthy environment—*sustainable development*. This is leading to real action, seen clearly in relation to the 2015 Paris Agreement, which key East Asian economies, including China, India, Indonesia, and Singapore, have joined.³

During the 19th National Congress of the Chinese Communist Party in 2017, President of China Xi Jinping emphasised that China must seek a sustainable development model marked by higher production, better living standards, and healthy ecosystems.⁴ In December 2017, China formally launched its national carbon market—the largest in the world.⁵ China was set to become the world's largest issuer of green bonds in 2017, topping the list for the second time, after entering the scene in 2016 to overtake traditional green financing giants such as the United States and France.⁶

In India, where climate change costs the government US\$10 billion every year, Prime Minister Narendra Modi vowed that his country would go “above and beyond” the 2015 Paris Agreement.⁷ With a particular focus on growing the renewables sector, the Indian government aims to generate 175 GW from a portfolio of renewable energy sources by 2022. Solar power will account for the majority of the mix, a target of 100 GW, followed by wind power as the next largest source.⁸

The Indonesian government, through its Ministry of National Development Planning and the National Development Planning Agency, will synchronize its strategic development plans with the United Nations Sustainable Development Goals (SDGs).⁹ President Joko Widodo has also made the issue of illegal forest fires and peatland management a national priority.¹⁰

In 2016, Singapore unveiled its Climate Action Plan to meet its targets under the Paris Agreement, outlining various measures to reduce its greenhouse gas emissions and enhance resilience to climate change. Improving energy efficiency across all sectors, including power generation, industry, and transport, is one of Singapore’s key strategies to reduce greenhouse gas emissions.¹¹ Besides designating 2018 as the Year of Climate Action, Singapore has also introduced a carbon tax that targets facilities producing 25,000 metric tons or more of greenhouse gas emissions per year.¹² The tax will initially be set at \$5 per metric ton of

emissions to allow companies time to adjust.¹³ Singapore’s other climate change efforts include the Smart Sustainable Cities initiative, which provides Singapore with an Information Technology framework that allows key officials to monitor its investments in infrastructure and governance efficiency gains in key areas including environment, transportation, and the circular economy – all of which contribute to energy efficiency and greenhouse gas emissions control.¹⁴

In the past, many Asian countries focused on highly evident pollution issues that affected public health. This emphasis led to intensified debate over air quality in cities. Focus sharpened in particular on the Southeast Asian haze caused by fires in Indonesia, which, in the worst years, cast a pall not only over the surrounding provinces, but across the whole region. These issues are important in and of themselves, but they have also been the “wedge in the door” to bring a wider consciousness for environmental issues. Today, the interconnections between episodes of hard to ignore pollution, its underlying drivers, and larger impacts have become more evident than ever. The debate about city air quality is beginning to implicate policies concerning power generation and industrial development and planning. Similarly, the issue of fires and haze has resulted in responsive efforts to better manage the production of key agroforestry crops like palm oil or pulp and paper to “green” the supply chains, respond to consumer preferences, and provide access to finance to support these sectors. Policy makers increasingly recognize that these issues are inextricably linked to global climate change.

Despite this environmental awakening, a number of environmental issues remain in contention with the West, especially concerning the conservation of nature and biodiversity. Contested topics include overfishing, trade in endangered species, and tropical deforestation. Moreover, the economic rise of the region—assuming a similar pattern of development as the West—denotes an increasing consumption of goods and services, as well as much higher

demands for energy. Even as they shift towards green growth and sustainable development, Asian countries do not want to have choose between growth and environmental protection. They want to enjoy both—a dynamic economy *and* a better environment. Finding a balance between the two goals presents a key challenge for the region.

Starting in the 1990s, as Asian economies become more closely connected to Western markets through global supply and production chains, links to a number of environmental and social concerns became evident. These continue, and some fear a “race to the bottom.”¹⁵ A contrary perspective argues that economic growth has enabled Asian countries to give increasing attention to environmental issues; what has been called the “environmental” Kuznets U-curve.¹⁶ This curve shows that public concerns with environmental issues increase as income rises. Anecdotally, as Asian economies prosper, resistance to pollution does rise. Just take a look at the revolutionary shift in public opinion in China about air quality in the recent years.¹⁷

As a whole, the Asian reaction to climate change—rather than local pollution—may be less straightforward. Similarly, the climate impacts of economic activities in Asia are affected by both the rising scale of production in the region—which pushes greenhouse gas emissions up—as well as the deployment of cleaner and improved technologies that lower emissions and improve efficiency with fewer resources consumed per unit of output.¹⁸ Given this mixed picture, the overall impact of trade and economic integration on climate change and emissions cannot be determined without deeper review. What has been found so far, however, is not reassuring for environmentalists.¹⁹

Conversely, caution about the trade impacts of environmental policies will increase in Asia as the climate change regime develops. Underlying this caution is that trade measures have been developed by entities like the United States or Europe, acting unilaterally in defining what they consider to be important environmental objectives. As a result, there is a

concern that economic protectionism, rather than true environmental protection, is driving strategic climate change policy.²⁰

Current Trade-Environment Rules: Make a Mess or Do Nothing Much?

Trade and economic agreements at the regional level often build on global commitments undertaken through the World Trade Organization, ensuring consistency and advancing liberalization initiatives and disciplines that are “World Trade Organization plus.” But dispute settlements deliver an opposite result. Indeed, trade-environment cases have a great deal of room for improvement. As a result, long-standing and unsettled debates characterize the trade-environment nexus—especially relating to species conservation cases addressed in the World Trade Organization’s dispute settlement mechanisms. Decisions that emerged from the World Trade Organization almost always decided the balance in favor of trade and have therefore disappointed environmentalists.²¹

Nonetheless, over time the World Trade Organization jurisprudence has grown more supportive of environmental concerns as long as the actions undertaken to promote environmental goals were not nakedly protectionist and the measures could be seen as the least trade-restrictive available. Some more recent cases have seemed more sensitive to legitimate environmental concerns, and interpretations of the same General Agreement on Tariffs and Trade text have become more flexible with regard to protecting environmental policies. The controversial *US-Import Prohibition of Certain Shrimp and Shrimp Products* case, for example, highlights the progress on trade-environment issues. The dispute was brought to the WTO because the United States banned the importation of certain shrimp and shrimp products from countries that used technology that adversely affected sea turtles. Although, initially, the United States lost the case, the WTO Appellate Body later reversed its ruling and concluded that the ban was, in fact, consistent with WTO rules.²²

But if history is a guide, we may expect that further friction will arise following the Paris Agreement as some nations conclude that others are not doing their share to meet global commitments. This tension might prove to be especially problematic as the General Agreement on Tariffs and Trade/World Trade Organization panels have primarily sought to address the issue by applying the basic foundations of trade law and the General exceptions found in Article XX.²³

Regional Approaches in East Asia

The challenges of integrating environmental and climate change concerns with trade and economic policy are replicated and even amplified when we consider the regional-level arrangements for East Asia. But without the demands of Western consumers and pro-environment demands of some governments, the intra-Asian agreements have been all but silent on environmental issues. When the Western powers of the United States and European Union have been involved, issues have been raised and dealt with in different ways. These may be briefly surveyed as follows in relation to ASEAN, other efforts including the Trans-Pacific Partnership, and negotiations facing EU trade agreements with Asia.

Association of Southeast Asian Nations (ASEAN)

In 2015, the ASEAN Community was inaugurated with a vision for economic integration, security cooperation, and better understanding on socio-cultural issues. Even within the relatively close-knit ASEAN group, however, there is no regime to deal with trade-environment issues. Cooperation on environmental issues dates back to 1977, and today ASEAN aims to “work towards achieving sustainable development as well as promoting a clean and green environment by protecting the natural resource base for economic and social development including the sustainable management and conservation of soil, water, mineral,

energy, biodiversity, forest, coastal and marine resources as well as the improvement in water and air quality.”²⁴ The new ASEAN Socio-Cultural Community Blueprint 2025 also has a strong emphasis on promoting and ensuring ozone layer protection, “as well as developing and adapting environmentally-sound technology” at all times.²⁵ The term “sustainable” is a recurring theme throughout the 2025 Blueprint with regards to environmental protection, social development, consumption, production, and responses to natural disasters.²⁶ The ASEAN nations have also made clear their commitment to climate change action, with each member government adopting nationally determined contributions under the Paris Agreement, although some studies indicate that these commitments may not be ambitious enough.²⁷

The ASEAN institution has three community pillars, and the fact that environmental concerns are assigned under the socio-cultural community pillar, rather than the economic, or political-security pillars, should be seen as cause for concern. This lack of policy integration and coherence across the three pillars of the ASEAN community can fail to take into account the complex dimensions in environmental issues.

Transboundary haze pollution offers a prime example. Despite the clear economic linkages to some actors working in certain sectors of the agroforestry industry—palm oil as well as pulp and paper—it remains an issue under the ambit of the Environment Ministers, and discussed only under ASEAN’s socio-cultural pillar. Some have questioned the viability of such an approach since these ministers do not control the licensing in these industries and have little influence over the production of these goods, or policies concerning land clearance and the use of fire. The demarcation of environmental issues in ASEAN defies the understanding today that sustainability and environmental issues are fundamentally economic issues that must be dealt with in this policy context. This limitation will become even more

apparent if such an approach is brought to the issues surrounding climate change, such as energy generation and pricing.²⁸

Other Asian Efforts and the Trans-Pacific Partnership / Comprehensive and Progressive Agreement for Trans-Pacific Partnership

The lack of integration of environmental concerns within the priorities of the ASEAN Community comes into sharp focus in the “ASEAN+1” trade and economic agreements. Many of these agreements do not even have a chapter relating to environment and sustainable development issues. Yet a number of emerging pathways can potentially bring further progress towards the ideals of sustainable development. The Trans-Pacific Partnership, originally led by the United States, and now completed without it as the Comprehensive and Progressive Trans-Pacific Partnership, sets out one approach to do so. Within the thirty chapters of the Trans-Pacific Partnership, a substantial number of provisions include environmental considerations. For example, the Trans-Pacific Partnership requires member nations to maintain and effectively enforce their current environmental laws. This provision specifically targets the concern that a country—particularly a developing country—would weaken its environmental laws and enforcement to gain unfair comparative advantage.

The Trans-Pacific Partnership also takes steps to ensure that its members comply with a broad range of multilateral environmental agreements. In a number of cases, it requires sanctions for noncompliance—above and beyond any provided in the multilateral environmental agreements themselves. For example, the Trans-Pacific Partnership levies sanctions and other penalties to prevent the illegal trade of wild flora and fauna, in support of the Convention on International Trade in Endangered Species of Wild Fauna and Flora—a multilateral environmental agreement signed by 182 countries that protects against illegal trade in wildlife. Further, the Trans-Pacific Partnership requires additional protections for

endangered species, such as rhinoceroses and elephants, and stipulates that countries work to protect the wetlands and other natural areas. It is also the first trade agreement ever to address sustainable fishing practices. First, the agreement stipulates that countries must end subsidies that negatively affect fish stocks in areas that are already being overfished. Second, countries must stop subsidizing fishing vessels engaged in illegal fishing. Both types of subsidies must be stopped within three years of the Trans-Pacific Partnership entering into force—a fast timetable considering that the World Trade Organization has been working, without resolution, to eliminate fishing subsidies for over a decade.

Further, all member countries will be affected by the logging provisions included in the Trans-Pacific Partnership, whether a country is a source of the illegally logged timber, a transit point in the distribution chain, or a source of demand for timber products. The Trans-Pacific Partnership also includes provisions to prevent marine pollution from ships. Specifically, it restates obligations under the International Convention for the Prevention of Pollution from Ships (MARPOL), an international agreement to prevent marine pollution, to which all Trans-Pacific Partnership countries are signatories. The Trans-Pacific Partnership also encourages cooperation to prevent marine pollution, including limiting emissions from ships and ensuring adequate port waste reception facilities. While climate change is not explicitly referenced in the Trans-Pacific Partnership, the agreement does address another atmospheric issue, that “emissions of certain substances can significantly deplete and otherwise modify the ozone layer in a manner that is likely to result in adverse effects on human health and the environment.”²⁹ The Trans-Pacific Partnership thus protects the ozone layer by limiting the production and consumption of ozone-depleting substances that are banned by the Montreal Protocol.

In addition to reinforcing the implementation of existing environmental agreements, the Trans-Pacific Partnership also strengthens cooperation between countries on

environmental issues more generally. A number of provisions emphasize the need to increase the development of cost-effective, low-emissions technologies and alternative, clean, and renewable energy sources. The Trans-Pacific Partnership also eliminates tariffs on numerous environmentally beneficial goods and directly encourages greater and better environmental cooperation in a variety of areas from energy efficiency, to accidental ship pollution, to deforestation. Further, it establishes an environmental committee with a representative from each country. The committee will meet regularly and will oversee the implementation of environmental provisions within the Trans-Pacific Partnership. If a country does not meet the commitments in the Trans-Pacific Partnership, it is subject to a dispute settlement mechanism.¹³ Failure to comply can include monetary fines and trade sanctions.³⁰

With these features, the text of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership goes further on environmental issues than any other treaty involving Asian countries and provides a platform on which member nations might build in advancing their collective commitment to climate change action. Moreover, the Trans-Pacific Partnership breaks new ground in providing the same dispute resolution mechanism under its environmental chapter as for market access disputes. But for a number of observers and environmental non-governmental organizations, especially in the United States, these provisions still fall short of expectations. One report summarized its critical findings as follows: “The final Trans-Pacific Partnership environment chapter fails to provide adequate protection in five of six environmentally critical areas, while doing nothing to strengthen an enforcement mechanism that has consistently failed to curb environmental violations on the ground.”³¹

EU-Asia: Unilateralism Impositions?

Another approach to link economic agreements to sustainable development concerns can be seen in the European Union's proposed trade deals. The European Union previously had a foreign trade agreement with South Korea., but it has subsequently negotiated a foreign trade agreement with Singapore, which is intended to be a "pathfinder" to further agreements with Asian countries and, especially, the ASEAN group as a whole.

It seems very likely, if not inescapable, that any future European Union-ASEAN foreign trade agreement will need to address environmental and other sustainable development issues, including provisions to promote climate change action. Whether these commitments emerge as part of the foreign trade agreement or by linked environmental agreements and undertakings remains to be seen, but the outline of the path forward has begun to emerge. The European Union recently issued, for instance, a plan to enhance environmental protection and other aspects of sustainable development, including labor rights. It referred to trade talks with Indonesia as an example of the European Union's efforts to seek a wider inclusion of themes, such as working conditions and "responsible" supply chain governance.³² The European Union sees these types of clauses and agreements as building blocks on the way to broader integration.³³

Controversies regarding these agreements are brewing. For example, the European Union's recent decision to limit the use of palm oil from Indonesia and Malaysia as biofuels and to require certification of sustainable production starting in 2019 has sparked controversy. This decision represents something of a compromise compared to earlier resolutions by the European Union Parliament that led to fears of an immediate ban. Instead, the decision gradually phases out palm oil for use in biofuels where there are risks that its production has accelerated deforestation, directly or indirectly. Similarly, environmental and ethical issues have been raised about other natural resources that are traded—illegally logged or fish and marine resources—with different Asian and ASEAN partners. In some cases, the

European Union and the affected Asian exporting country agreed on certification and compliance processes.

But other areas—exemplified by fish and marine products from certain countries accused of illegal and unregulated fishing—remain contested. The current models of foreign trade agreements between the European Union and Asian/ASEAN partners have not incorporated these issues. Instead, such environmental controversies have arisen in political and other forums. In some cases, they have resulted in resentment and resistance where the standards imposed are perceived to be Euro-centric policy choices that smack of unilateral imposition and possible protectionism.

To return to the palm oil example, Indonesian producers argue that the proposed European Union barriers will target their own production of edible oil and biofuels from soybeans and rapeseed, which are markedly less productive. Thus, the European Union's measures can be seen as a “double negative;” both anti-free trade and anti-sustainable development. This example illustrates that certain decisions that seek to promote environmental objectives (such as preventing tropical deforestation) can have disproportionately negative social impacts, affecting the livelihoods of many palm oil small holders. If the European Union and ASEAN are to proceed with a foreign trade agreement, a two-way dialogue on trade-environment and climate change issues will be needed, with deeper thinking on how best to deal with specific products as well as to re-shape the overall framework of trade policy.

Incentives for Green, Climate Change-Friendly Goods and Services

In contrast to “double-negative” measures, there remain some who hope that incentives and assistance can help countries meet environmental objectives, while also increasing trade—a “double-win.” There has been a long-standing idea that, where tariffs and other measures

impact trade in goods and services, preferences and incentives can be given for “green,” climate change-friendly products and services.

The World Trade Organization and the Asia Pacific Environment Cooperation (APEC) created a few initiatives for such products and services. While the idea has increasingly gained purchase, efforts for implementation have seen only modest progress. Little agreement has been reached between countries of what constitutes a “green” product. States took a classification approach, exchanging their list of “green” products with other states on an offer and acceptance basis. Each item agreed between the parties would then receive preferential treatment for freer trade between the parties. However, little that was offered by one state received acceptance by others. Instead, each state tended to stand on its list. Nor did states reach an agreement on the broad criteria about what constitutes a “green product.” Indeed, in some cases, the reverse has been true. Sometimes, the same product can be assessed in diametrically different ways by the parties involved. In the previously-mentioned case of palm oil, for example, exporters portray their product as pro-environment even as the importing countries denounce it as anti-environment. In another dispute, solar panel exports from China were not given any preference as a “green” product. Instead, the United States challenged the Chinese proposal, citing trade disciplines relating to subsidies. These disputes highlight that, while incentivising green products and services seems like an attractive and common sense approach, agreement on the specific products that qualify often remains allusive.

Concluding Remarks: A Search for Possible New Approaches

Trade policy choices that strive for environmental and economic good in tandem have been very limited to date, possibly necessitating alternative approaches that go beyond the trade of goods and services. Specifically, there is a pressing need to deal with underlying issues in

production and process methods, including energy subsidies, supply chains, and green finance.

In many Asian countries, energy prices remain subsidized, which distorts true energy demand. In addition, the hunger for energy is increasing along with the economic rise of the region, creating a risk of rising greenhouse gas emissions. One debate in the region that follows, naturally, is about the use of coal—plentiful and cheap in a number of Asian countries—to meet the gap in energy supplies. At the same time, given the Paris Agreement as well as concerns about local pollution, there is a broad consensus that pricing carbon—internalizing the externality—is critical to correct markets and allow them to serve as a fair basis for climate change action. Carbon taxes also help in the transition to renewable, non-carbon energy sources like solar and wind. Indeed, a number of countries over the last two decades have introduced a carbon price. In comparison, foreign trade agreements are poor instruments to deal with the core issues of policy, finance, and infrastructure, all of which are necessary tools to foster transition and address the resulting negative externalities. Article 6 of the Paris Agreement lays the groundwork for an international regime governing the use of market mechanisms to help countries meet their nationally determined climate change targets, yet negotiations on this specific provision have been pushed off.³⁴

Standards within supply chains are another area where climate change policy could make Asian trade more climate change-friendly, whether for manufactured goods or in resources extraction. Technical requirements may take the form of maximum levels of emissions or of energy consumption, or they may specify standards for energy efficiency for both products and production methods. In Asia, with its growing consumer class and rapid urbanization, it would be fruitful to focus on consumer electrical equipment and set “green” standards in buildings, transport, and industry.

Green finance offers a third potentially beneficial avenue for greater economic integration and climate change action across Asia. Especially when it comes to infrastructure, climate finance could have a significant impact in helping the region decarbonize. Green finance can provide a mechanism for expanded investment in projects that would allow for low-carbon options to be adopted. Governments of the world are continually making more resources available for climate finance, and the Standing Committee on Finance to the UN Framework Convention on Climate Change reported that climate finance flows increased by 17 percent in the period from 2015-2016 compared to the previous two years with high bound estimates increasing to \$681 billion in 2016 from public and private sources.³⁵ Yet, a considerable amount more is needed to reach the levels of financing required to facilitate the transition of the global economy toward low-emissions sustainable development in line with keeping planetary warming near or below the global goal set in the Paris Agreement.

The Intergovernmental Panel on Climate Change estimates that limiting warming to 1.5°C would require an average annual investment of \$2.4 trillion in energy systems alone.³⁶ If finance is the lifeblood of the economy, then green finance is key to the development of a sustainable development and pro-climate economy. The launch of a “green bank” in Malaysia shows the creative possibilities that need to be explored.³⁷

Green finance can move many different sectors of the economy towards better environmental outcomes. If scaled properly, it can also help address social and equity concerns to support sustainable development goals. For example, green finance can incentivise smallholders in the agricultural supply chain to adopt sustainable practices in land clearing and crop management. It can also help incentivize trade in certified green products by underwriting the cost of certification processes.³⁸ But perhaps the most visible “big ticket” area where green finance can be beneficial is the development of infrastructure. With most infrastructure projects, there are large capital requirements. Therefore, any differential

between green and normal finance can be multiplied to scale up benefits. In a number of cases, the more sustainable project will require more capital upfront. However, upfront costs can be recovered from efficiency gains or other energy savings. The “climate change action” business case will be much improved if the larger initial capital expenditure cost can be underwritten by green finance.³⁹

Initial green finance steps have been taken in Asia, notably by China and Japan, and at an earlier stage by some countries in ASEAN, including Singapore.⁴⁰ Much more work, however, is required to transform the financial systems of the region, both generally and especially in relation to infrastructure connecting the region. Such efforts are of course very different from free trade and economic cooperation agreements. They may, however, be regarded as a practical form of economic integration and the degree to which they are “greened” can also be key. What is beginning to emerge within these countries has implications not only for the environment, but also for trade and investments across the region. Economic activities and cooperation can no longer be isolated from concerns with climate change, environmental protection, and sustainable development. Take for example, China’s Belt and Road Initiative, which has attracted controversy and criticism for a range of reasons, including environmental and social concerns.

It is true that there have been instances in the past when China has funded and led projects that were seen to be damaging to the environment. One clear example of this was the Myitsone dam to be built in Myanmar, which was called off by the then-military-supported government, citing concerns on the high environmental and social harms. However, policy changes seem to be underway.⁴¹ It is noteworthy that the involvement of multilateral development banks such as the Asian Infrastructure Investment Bank and the use of green bonds is increasingly prominent and is likely to evolve further.⁴²

Looking at these issues—energy, supply chains and product standards, and green

finance, especially in relation to infrastructure—would go beyond questions of international trade *per se*, and expand the focus to how traded goods are produced, priced, and provided, and consider any environmental or climate change conditionality that could incentivise one product over another. This broader focus would effectively go beyond the “second best” approach to trade measures that has been controversial in trade-environment debates. Such an approach could also be more intrusive and is in tension with trade rule approaches that insist on assessing the good itself, rather than how that good is made. The questions of incentives and subsidies to incentivise green actions might also be seen as inconsistent with some interpretations of current trade rules. The Paris Agreement does not fix policy choices and instead recognizes, through the use of nationally determined contributions, that the schemes adopted by different countries will differ according to their capacities and policy choices. Given the diversity and the provision of subsidies of different types and amounts, it is possible that these schemes may become controversial in terms of the trade disciplines, especially regarding subsidies.

The trade and environmental protection regimes often appear to come into conflict with one another. The World Trade Organization rules have not been successful in dealing with even the most basic controversies over the use of trade measures to press forward environmental causes. At the global level, we have yet to find ways to balance trade-environment concerns in a way that is consistent over time and accepted as legitimate by all the stakeholders. As the Paris Agreement prompts more countries to take climate change action, there will be more tests of the rules and processes to handle climate change policy differences between countries. These agreements allow a broad range of diversity in what states do to implement their nationally determined contributions and other obligations, emphasizing monitoring, financial assistance, and capacity building as means to foster compliance by states, rather than sanctions and “sticks” to enforce and compel. Addressing

climate change will drive changes in many sectors, government policies and rules, and reveal new dimensions of competitiveness and comparative advantage. It is inevitable, therefore, that climate change efforts will impact economic integration efforts, and vice versa.

As the countries in East Asia continue to grow and seek deeper economic cooperation and integration, these challenges will surface at the regional level—and how the tensions are worked out may provide a model for the world. At present, the East Asian economic agreements and processes have largely avoided these issues or else have insufficiently dealt with them. Even the most advanced agreement, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, aligns with existing multilateral environmental agreements but not with the Paris Agreement. As the international community moves ahead with further economic integration—and the sustainability imperative—many more and deeper issues must be addressed.⁴³ These include not just trade practices, but also essential elements of production and process methods in different sectors including, as discussed, energy pricing, standards, and finance. As East Asian economic integration advances, climate change and trade integration efforts in ASEAN and East Asia must be increased to balance complex environmental and climate change concerns.

Notes

¹ Patrick Schroeder, “China and Global Climate Change – From Laggard to Leader?” *Asia Dialogue*, June 3, 2017, <http://theasiadialogue.com/2017/06/03/china-and-global-climate-change-from-laggard-to-leader/>; Ed King, “China and Russia block UN Security Council climate change action,” *Climate Home News*, February 18, 2013, <https://www.climatechangenews.com/2013/02/18/china-and-russia-block-un-security-council-climate-change-action/>; Mintu Barua, “India’s Environmental Strategy in the Global Climate Negotiations,” *International Studies* 51 no. 1–4 (2014): 195–211.

² IRENA, “Renewable Capacity Highlights,” *International Renewable Energy Agency*, March 31, 2018, https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Mar/RE_capacity_highlights_2018.pdf?la=en&hash=21795787DA9BB41A32D2FF3A9C0702C43857B39C/.

³ Japan too has made a number of notable changes especially post Fukushima and with the Abe administration. However, given constraints of length, the examples picked are from developing Asia.

⁴ Amongst efforts by China, the efforts on renewable energy may be most visible. According to Frankfurt School-UNEP Centre/BNEF, “Global Trends in Renewable Energy Investment 2018,” China invested a total of \$126.6 billion in renewable energy in 2017, the highest figure ever and comprising 45% of global green energy investment. See Chong K. Ping, “19th Party Congress: Xi Jinping affirms China’s commitment on green development,” *The Straits Times*, October 18, 2017, <https://www.straitstimes.com/asia/east-asia/19th-party-congress-xi-jinping-says-china-must-cooperate-with-other-nations-on>. See also Financial Tribune, “China Leads Worldwide Renewable Investment With \$126b,” *Financial Tribune*, April 8, 2018, <https://financialtribune.com/articles/energy/84279/china-leads-worldwide-renewable-investment-with-126b>.

⁵ The first phase of the market only covers power generation. Hal Harvey and Hu Min, “The China Carbon Market Just Launched, And It’s The World’s Largest. Here’s How It Can Succeed,” *Forbes*, December 19, 2017,

<https://www.forbes.com/sites/energyinnovation/2017/12/19/the-china-carbon-market-just-launched-and-its-the-worlds-largest-heres-how-it-can-succeed/#35ba8f877ce6>.

⁶ Yen N. Lee, “Climate Change: China Is the World’s Biggest Green Bond Issuer,” *CNBC*, December 26, 2017, <https://www.cnbc.com/2017/12/26/climate-change-china-is-the-worlds-biggest-green-bond-issuer.html>.

⁷ Deb Purnita, “Climate Challenge Costs India \$10 Billion Every Year,” *International Business Times, India Edition*, August 18, 2017, <https://www.ibtimes.co.in/climate-challenge-costs-india-10-billion-every-year-738835>; Soutik Biswas, “India to Go ‘above’ Paris Climate Accord,” *BBC*, June 3, 2017, <https://www.bbc.com/news/world-asia-india-40144613>.”

⁸ Rebecca Bundhun, “India under Pressure to Fight Climate Change over Environmental Concerns,” *The National*, February 4, 2018, <https://www.thenational.ae/business/economy/india-under-pressure-to-fight-climate-change-over-environmental-concerns-1.701500>.

⁹ Minister of National Development Planning Bambang Brodjonegoro had previously remarked that for Indonesia, the SDGs are not only relevant as a form of global commitment but also as a guide for it to become a developed country. See Heru Purwanto, “Government to synchronize development plans with UN SDGs,” *AntaraNews.com*, August 1, 2018, <https://en.antaranews.com/news/112079/government-to-synchronize-development-plans-with-un-sdgs>.

¹⁰ In 2016, Indonesia established the Peatland Restoration Agency (BRG) helmed by former director at WWF-Indonesia chief Nazir Foad, whose aim is to restore damaged

peatland on companies' concessions and government land. See Francis Chan, "UN praises Indonesia's peatland management efforts," *The Straits Times*, March 24, 2018, <https://www.straitstimes.com/asia/se-asia/un-praises-indonesias-peatland-management-efforts>.

¹¹ Abdullah Zhaki, "Singapore Ratifies Paris Agreement," *The Straits Times*, September 22, 2016, <https://www.straitstimes.com/singapore/singapore-ratifies-paris-agreement>.

¹² Channel NewsAsia, "Singapore to Declare 2018 Year of Climate Action," November 17, 2017, <https://www.channelnewsasia.com/news/singapore/singapore-to-declare-2018-year-of-climate-action-9414346>; Audrey Tan, "Singapore Budget 2018: Carbon Tax Will Affect Mainly Large Polluters," *The Straits Times*, February 20, 2018, <https://www.straitstimes.com/politics/carbon-tax-will-affect-mainly-large-polluters>.

¹³ Tan, "Singapore Budget 2018: Carbon Tax Will Affect Mainly Large Polluters."

¹⁴ ITU-T, "Implementing ITU-T International Standards to Shape Smart Sustainable Cities: The Case of Singapore," *Infocomm Media Development Authority*, 2017, https://www.itu.int/en/publications/Documents/tsb/2017-Implementing-ITU-T-International-Standards-to-Shape-Smart-Sustainable-Cities-The-Case-of-Singapore/files/downloads/418504-%20ITU_Case-Study-Singapore-E.pdf, 3.

¹⁵ Daniel Esty and Marie Pangestu, "Globalization and the Environment in Asia," United States-Asia Environmental Partnership, Framing Paper, June 1999, 22.

¹⁶ André Dua and Daniel C. Esty, *Sustaining the Asia Pacific Miracle: Environmental Protection and Economic Integration* (Washington, DC: Peterson Institute for International Economics, 1997), 75.

¹⁷ Yaling Lu, Yuan Wang, Jian Zuo, Hongqiang Jiang, Dacang Huang, and Raufdeen Rameezdeen, "Characteristics of public concern on haze in China and its relationship with air quality in urban areas," *Science of The Total Environment* 637-638 (2018): 1597-1606.

¹⁸ The “scale” effect refers to the expansion of economic activity and the likely correspondence in expanded resource use and emissions.

¹⁹ Octavio Fernandez-Amador, Joseph F. Francois, and Patrick Tomberger, “Carbon-dioxide emissions and international trade at the turn of the millennium,” *Ecological Economics* 126 (2016): 24.

²⁰ It is important to acknowledge that unilateral actions per se are not illegal under international law. See Shinya Murase, “Unilateral Measures and the WTO Dispute Settlement,” in *Asian Dragons and Green Trade: Environment, Economics and International Law*, ed. Simon S.C. Tay and Daniel C. Esty (Cambridge, MA: Times Academic Press, 1996), 137-144. They have, however, been discouraged both in the WTO and in environmental fora such as the Rio Earth Summit (Rio Declaration, Principle 12). As already noted, a number of unilateral measures for the environment have been struck down by the WTO as being incompatible with trade rules. The preference for multilateral solutions over unilateral action was strongly reinforced in the shrimp-turtle case.

²¹ Daniel C. Esty, “Free Trade and Environmental Protection” in *The Global Environment* eds. Regina S. Axelrod and Stacy D. VanDeveer (SAGE), forthcoming.

²² WTO, “India etc versus US: ‘shrimp-turtle,” *WTO*, Accessed March 31, 2019. https://www.wto.org/english/tratop_e/envir_e/edis08_e.htm. See WTO, “US-Import Prohibition of Certain Shrimp and Shrimp Products,” Report of the Panel WT/DS58/R, May 15, 1998; and WTO, “US-Import Prohibition of Certain Shrimp and Shrimp Products,” Appellate Body Report WT/ DS58/AB/ R, adopted November 6, 1998. The case did ameliorate some aspects of the Tuna-Dolphin case, as will be analyzed in this paper. WTO, “DS58: United States — Import Prohibition of Certain Shrimp and Shrimp Products,” WT/DS58/R and WT/ DS58/AB/ R, 1998, https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds58_e.htm.

²³ Article XX (b) exempts measures that are "necessary to protect human, animal or plant life or health." Moreover, Article XX (g) exempts measure relating to "conservation of exhaustible natural resources." Jointly, they are understood to cover all environmental objectives. However, the chapeau of Article XX also provides a two-tier test, as the invoking party must prove that the measure is "necessary" (i.e. genuine) and least trade restrictive for the objective sought. However, each country is free to pursue whatever environmental objective or level of standard it deems necessary. Yet, some environmental groups have suggested that the WTO should give more leeway to sincere attempts by nations to legislate.

²⁴ Simon Tay and Tijaja Julia P, *Global Megatrends: Implications for the ASEAN Economic Community* (Jakarta: Singapore Institute of International Affairs, 2017), 101.

²⁵ Simon Tay and Tijaja Julia P, *Global Megatrends*, 101.

²⁶ Simon Tay and Tijaja Julia P, *Global Megatrends*, 101.

²⁷ Enerdata, "Growing Economy & Access to Electricity Mean Booming Energy Use in Southeast Asia," October 11, 2018, <https://www.enerdata.net/publications/executive-briefing/south-asia-booming-energy-use.html>.

²⁸ Enerdata, "Growing Economy & Access to Electricity."

²⁹ Office of the United States Trade Representative, "TPP Full Text," accessed February 20, 2019, <https://ustr.gov/trade-agreements/free-trade-agreements/trans-pacific-partnership/tpp-full-text>, art. 20.5.

³⁰ Jay Chittooran, "TPP in Brief: Environmental Standards," *Third Way*, April 16, 2016, <https://www.thirdway.org/memo/tpp-in-brief-environmental-standards>.

³¹ Sierra Club, "TPP Text Analysis: Environment Chapter Fails to Protect the Environment," accessed February 17, 2019, <https://tpplegal.files.wordpress.com/2015/12/sierra-environment.pdf>.

³² International Centre for Trade and Sustainable Development (ICTSD), “EU, ASEAN Ministers Call for Greater Efforts to Advance Trade Talks,” *Bridges* 22, no. 8 (2018), <https://www.ictsd.org/bridges-news/bridges/news/eu-asean-ministers-call-for-greater-efforts-to-advance-trade-talks>.

³³ ICTSD, “EU, ASEAN Ministers Call for Greater Efforts to Advance Trade Talks.”

³⁴ Leslie Hook, “Deal struck at climate talks to put Paris pact into action,” *Financial Times*, December 15, 2018, <https://www.ft.com/content/51854750-00b0-11e9-9d01-cd4d49afb3>.

³⁵ UNFCCC, “Summary and recommendations by the Standing Committee on Finance on the 2018 Biennial Assessment and Overview of Climate Finance Flows,” December 2018, <https://unfccc.int/sites/default/files/resource/51904%20-%20UNFCCC%20BA%202018%20-%20Summary%20Final.pdf>.

³⁶ Intergovernmental Panel on Climate Change (IPCC), “Global Warming of 1.5 °C,” Special Report, Summary for Policy Makers, 2018, https://www.ipcc.ch/site/assets/uploads/sites/2/2018/07/SR15_SPM_High_Res.pdf, 23.

³⁷ Yinong Sun, “Green Bank Network Aims for Global Clean-Energy Investment,” *Clean Energy Finance Forum*, January 4, 2016.

³⁸ Singapore Institute of International Affairs (SIIA), “Financing Indonesia’s Independent Smallholders,” working paper, May 2018, <http://www.siaonline.org/wp-content/uploads/2018/05/Working-Paper-Financing-Indonesias-Smallholder-Financing.pdf>.

³⁹ Examples of these are found in energy-efficiency schemes, where design and equipment benefit from upfront investments of time and expenditure. Similarly, when solar panels are installed, much of the costs are upfront whereas those using carbon-based energy like coal may

have lower initial costs. Further ahead however, the solar energy is generated at almost zero cost, whereas carbon-based energy generation will require the supply of the base fuel.

⁴⁰ Singapore Institute of International Affairs (SIIA), “Financing Indonesia’s Independent Smallholders.”

⁴¹ At the Asian Infrastructure Investment Bank’s (AIIB) second annual meeting held in Jeju, South Korea in 2017, AIIB President Jin Liqun reaffirmed the bank’s commitments to the Paris Agreements, and its emphasis on helping members transition towards a “low-carbon future”. He described the bank’s operational practices as “lean, clean and green” saying that it was “responsive to infrastructure needs, committed to good governance, and dedicated to sustainable development practices.” See Sara Hsu, “The ‘Lean, Clean And Green’ AIIB Is Ready For More Ambitious, Independent Projects,” *Forbes*, July 10, 2018, <https://www.forbes.com/sites/sarahsu/2017/07/10/the-lean-clean-and-green-aiib-is-ready-for-more-ambitious-independent-projects/#487c214d2d49>.

⁴² This will create opportunities for global financial institutions, including banks, sovereign wealth funds, pension funds and insurance companies, to invest in Belt and Road Initiative (BRI) assets while, at the same time, help ensure that BRI projects are environmentally sustainable. See HSBC Global Business Group, “Ensuring Sustainability throughout the BRI,” *HSBC*, January 30, 2018, <https://www.business.hsbc.com/belt-and-road/ensuring-sustainability-throughout-the-bri>.” China is already exploring partnerships with individual states along the BRI routes, notably working with countries such as Sweden, which alongside China have been leaders in the development of green finance. In June 2017, Sweden’s Minister for the Environment, Karolina Skog, made an official visit to China. The visit was part of a joint project between China’s Brookings-Tsinghua Center for Public Policy and the Stockholm Environment Institute (SEI) to promote innovation in green finance and sustainable infrastructure in the BRI. In 2017, the Industrial and Commercial Bank of China (ICBC) listed its inaugural “Belt and Road” climate bond in Luxembourg. See Luxembourg Stock Exchange (LuxSE), “ICBC Lists Its Inaugural ‘Belt and Road’ Climate Bond in Luxembourg,” *Luxembourg Stock Exchange (LuxSE)*, October 30, 2017, <https://www.bourse.lu/pr-icbc-lists-belt-and-road-climate-bond>.

⁴³ Daniel C. Esty, “Red Lights to Green Lights: From 20th Century Environmental Regulation to 21st Century Sustainability,” *Environmental Law Review* 47, no. 1 (2017).