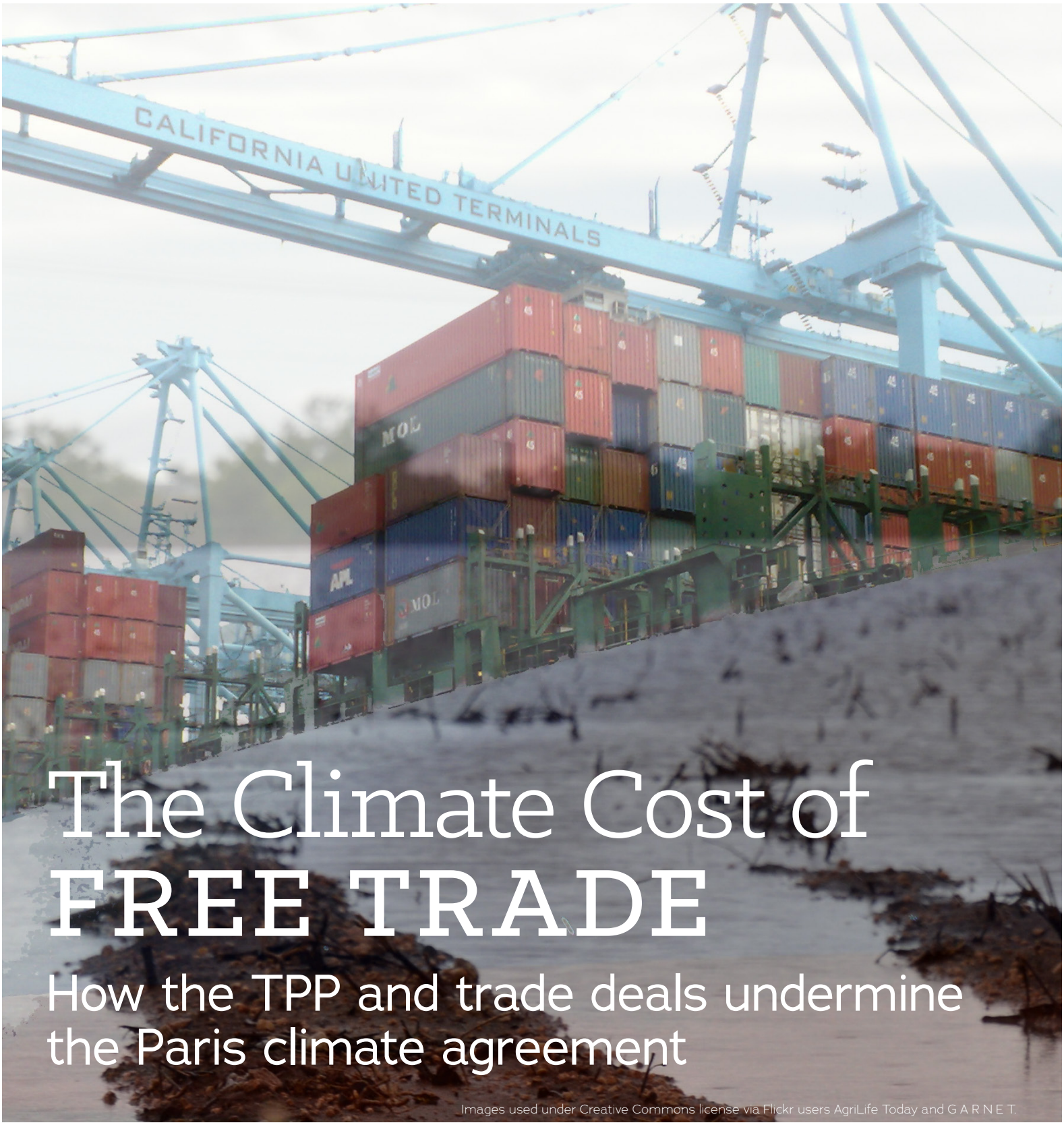

The Climate Cost of FREE TRADE

How the TPP and trade deals undermine the Paris climate agreement

30 years 1986–2016 INSTITUTE FOR AGRICULTURE & TRADE POLICY

Written by Ben Lilliston
Institute for Agriculture and Trade Policy (IATP), September 2016

The Climate Cost of Free Trade: How TPP and trade deals undermine the Paris climate agreement

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INTRODUCTION

On Earth Day 2016, the U.S. joined 175 countries in signing the United Nations Paris climate agreement setting a path forward to reduce global greenhouse gas emissions.[1] A few months earlier, the U.S., along with 11 other countries, signed the Trans Pacific Partnership (TPP) trade and investment deal.[2] Remarkably, neither agreement acknowledged the other. The Paris agreement was silent on trade, and the TPP ignored the climate. As countries take action to protect the climate, conflicts between trade rules and climate goals will escalate. The intentional separation of these two global priorities is becoming increasingly untenable.

In this paper we'll look at real world examples of how trade rules already conflict with climate goals, and dig into the TPP more deeply to project how the proposed deal creates barriers for countries trying to meet their Paris climate pledges. Along the way, we will review a variety of trade reform proposals designed to address our dysfunctional and climate-damaging trade regime.

At the heart of the Paris climate agreement are national-level plans, called Intended Nationally Determined Contributions (INDCs), to reduce greenhouse gas (GHG) emissions.[3] Though these INDCs are voluntary, they are considered a critical first step for an agreement designed to progressively ratchet up national commitments to collectively limit a global temperature rise to 1.5 degrees Celsius above pre-industrial age levels. Within each INDC are goals, policies and strategies to reduce GHG emissions and adapt to climate change in various sectors.

The goals for trade agreements including the TPP are much different, and often conflict with climate objectives. Trade agreements are first and foremost about expanding trade, often in highly extractive, energy-intensive sectors. They are also about protecting the rights of corporations and financial firms, undermining and lowering regulations intended for the public good, dictating government spending, and strengthening intellectual property rights. In other words, trade agreements set broad-reaching rules for the economy and government policy that often adversely affect the climate.

In almost every respect, the TPP and other trade deals like it are in deep climate denial. For example, climate concerns are completely absent in the 1994 North American Free Trade Agreement (considered the template for future free trade deals),[4] as they were in the formation of the World Trade Organization (WTO) in 1995.[5] We are now dealing with the consequences of that neglect.

The era of modern trade deals has had a profound impact on the global economy. The value of world trade has more than quintupled, from $8.7 trillion in 1990 to more than $46 trillion in 2014, according to the World Bank.[6] World export volume has grown 32-fold between 1950 and 2010, according to World Trade Organization data.[7] Global trade has skyrocketed in fossil-fuel intensive sectors like agriculture, forestry, and the energy sector itself.

Research assessing the precise and expansive impacts of free trade agreements on greenhouse gas emissions and climate change is beginning. An international team of researchers estimate that more than a quarter of global carbon emissions in 2008 were related to internationally traded goods and services.[8] That same research found that emissions from the production of goods exported from countries with no GHG reduction commitments (aka non-Annex B countries) to countries which did (aka Annex B countries) increased by more than 130 percent from 1990-2008. They concluded that: "international trade is a significant factor in explaining the change in emissions in many countries, from both a production and consumption perspective. We suggest that countries monitor emission transfers via international trade, in addition to territorial emissions, to ensure progress toward stabilization of global greenhouse gas emissions."[9]

Aside from associated emissions, this expanded era of globalization may also have implications for dealing with the effects of climate change. As supply chains have become global, new research indicates that they've become more vulnerable to disruption from extreme weather events, and that increased global trade could increase climate-related financial losses.[10]

As countries implement their national climate plans, we can expect an increase in formal legal challenges under trade agreements, which will have serious climate change and energy policy ramifications. We have already seen corporations and governments use trade and investment rules to challenge the U.S. decision to reject the highly-controversial TransCanada

Corporation's Keystone XL pipeline; and we have also seen trade rules used to challenge India's popular domestic solar program.

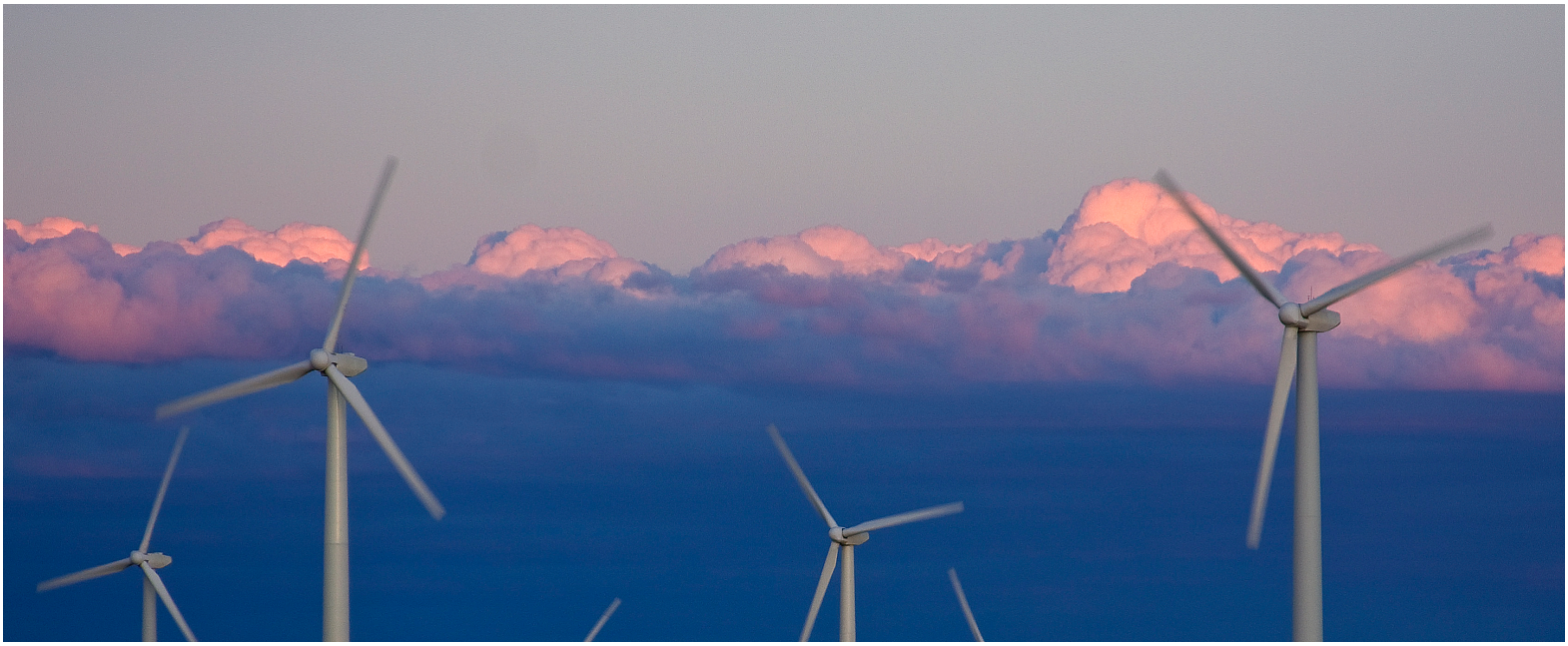
Beyond influencing energy policy explicitly, existing free trade deals further entrench an export-oriented, industrial model of agriculture that is itself a significant contributor to climate change. Yet policies to support climate-resilient farming systems, such as allowing grain reserves to protect farmers from market volatility or incentives for long-term investments in adaptation strategies like agroecological practices, are often discouraged by the WTO and free trade deals like the TPP.

Conflicts between climate goals and trade rules will multiply should TPP go into effect. The massive, 5,000-page, 12-nation deal between Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, United States, and Vietnam is the largest free trade agreement ever negotiated – setting rules for 40 percent of the world's Gross Domestic Product. The TPP is designed to be a "living agreement" where new members can be added over time (South Korea, Indonesia and Thailand are already voicing interest) and with provisions for a gamut of ongoing committees to continually revise rules. The deal takes on particular significance because it is viewed by the U.S. Trade Representative as precedent setting for future regional and multilateral trade agreements."[11]

Finally, issues of equity plague both trade and climate policy. A growing body of evidence indicates expanding income inequality in the free trade era. Economists from Tufts University project further increases in income inequality as a result of TPP.[12] Equity issues have long been part of the climate change debate as well. These challenges center around who's responsible for climate change; who will experience the harm it causes; who will pay the price for it; and even who will benefit from it. Equity permeates international discussions at the UNFCCC, national and even regional climate policies—such as the California carbon market. Confronting inequity must be at the center of reconciling trade and climate policy arenas.

The good news is that the TPP is falling under increased scrutiny and criticism from a wide range of perspectives – including those focused on climate change. The TPP is now a hot button issue in the U.S. Presidential race with Republican and Democrat candidates stating their opposition to it. TPP backers, primarily multinational corporations and financial firms, are launching an aggressive lobbying campaign to quietly pass the trade deal during the lame duck session after the November elections.

While the rejection of the TPP is an important first step, much more is needed to bring existing trade rules into line with the Paris climate agreement. Fortunately, there is no lack of innovative thinking about how to reform existing trade rules to respond to the climate crisis—ideas that complement reform proposals from civil society groups over the last three decades. Many proposed reforms focus on limiting the far-reaching scope of modern trade agreements -- those that have sprouted tentacles reaching everything from intellectual property rules, to weakening health and environmental rules, to creating special corporate courts that benefit multinational firms. Other proposed reforms focus on the trade dispute process, as well as how to provide the flexibility necessary to protect domestic food and energy production. These proposals launch us toward more fundamental and urgent trade policy reforms vital to our ability to limit global temperature rise to 1.5 degrees C as agreed to under the Paris climate agreement.



TRADE RULES VS. RENEWABLE ENERGY POLICY

> "There are, and will be, interactions between trade and climate `response measures.' [policies]. These will become increasingly pronounced as UNFCCC parties boost their pre-2020 climate actions and implement post-2020 INDCs." Peter Govindasamy, Trade Minister of the TPP-member country Singapore and active in both trade and climate negotiations.[13]

In February 2016, a WTO dispute panel ruled that India's solar program, which provides preferences and subsidies for the local production of solar panels, discriminated against foreign (in this case, U.S.) solar panel producers.[14] India defended its support for local production of solar panels citing its UNFCCC climate commitments. The WTO determined, however, that India's climate obligations did not protect the solar program from existing trade rules. While dispute panel decisions of this kind are rarely overturned, India appealed the WTO ruling in April.[15] No decision on that appeal has yet been made.

The India solar ruling was touted by the U.S. Trade Representative Michael Froman as having broad implications in its efforts to challenge what it calls "localization barriers to trade." "This is an important outcome, not just as it applies to this case, but for the message it sends to other countries considering discriminatory `localization' policies," he boasted.[16]

Many climate-related policies from energy to agriculture, support more localized systems because of the economic benefits they bring, including job creation. The Institute for Local Self Reliance estimates that the total economic value to the community of local ownership in energy production is 50-240 percent greater than non-local ownership.[17] Another study found that community-owned wind energy brought eight times the financial benefit to the community over outside ownership.[18] The use of local money for local ownership and resources for local jobs is viewed as an essential part of a "just transition" to a low GHG emitting economy—and part of why these types of public investment programs are so popular whether related to energy or food.[8]

Not surprisingly, many other national and local governments around the world have programs similar to India's solar program. But the WTO has consistently ruled against them in trade disputes. In a 2012 ruling, the WTO struck down a comparable solar program in Ontario, Canada.[19] One year earlier, the U.S. succeeded in challenging local content and other incentives included in China's wind energy program at the WTO.[20]

In defending its solar program earlier this year, India correctly pointed out that several U.S. state programs (including Minnesota, Delaware, Massachusetts, and Connecticut) are also structured to create green jobs and spur renewable energy by providing a variety of benefits for solar manufacturing and sourcing within each state.[21] According to the Sierra Club, nearly half

of U.S. states have similar programs to promote renewable energy.[22]

While WTO rules allow for country-to-country disputes, free trade agreements like NAFTA and the proposed TPP go further by granting multinational corporations' special legal rights through a provision called the Investor State Dispute Settlement (ISDS) system. The ISDS allows foreign corporations to use a private tribunal system of three trade lawyers to challenge the public laws of another country if they believe the laws are discriminatory or unfair. There is no appeal process. These corporate rights provisions are particularly relevant to climate-related policy.

In January, TransCanada gave notice that it planned to use the ISDS to sue the U.S. government under NAFTA, charging that President Obama's Administration had unfairly rejected the Keystone Pipeline. The pipeline would have carried high GHG-emitting tar sands oil from Alberta, Canada through the U.S. Midwest for refining. U.S. Secretary of State John Kerry cited climate considerations in rejecting the pipeline.[23] In June, TransCanada took the next step and officially filed suit against the U.S. government, seeking $15 billion in damages.[24] The case will now move to a three-lawyer tribunal at the International Centre for Settlement of Investment Disputes: no court date has been set. Should the tribunal decide against the U.S., whatever is paid to TransCanada will come out of the pockets of the U.S. taxpayer.

ISDS under NAFTA grants foreign corporations protections in cases where initial investments have been made and future profits were projected. Some experts believe TransCanada has a strong case.[25] TransCanada claims it had already made a substantial investment in the Keystone pipeline by the time it was rejected after seven years of review. The corporation further claims that Keystone was treated differently than other pipelines that have been approved in the U.S., and that the Obama Administration's decision was politically motivated to demonstrate leadership on climate change.

Other corporate rights cases under NAFTA have challenged bans on offshore drilling put in place to protect wildlife,[26] and a ban on fracking put in place to protect waterways.[27] According to the UN Conference on Trade And Development (UNCTAD), more than 600 ISDS cases have been filed worldwide, with the most common cases in 2014 challenging government policy on energy and oil, gas and mining.[28] The mining industry, in particular, likes to use ISDS—suing over 40 governments more than 100 times.[29] Several TPP countries are home to major mining companies and operations including Canada, Chile, Peru and the U.S.

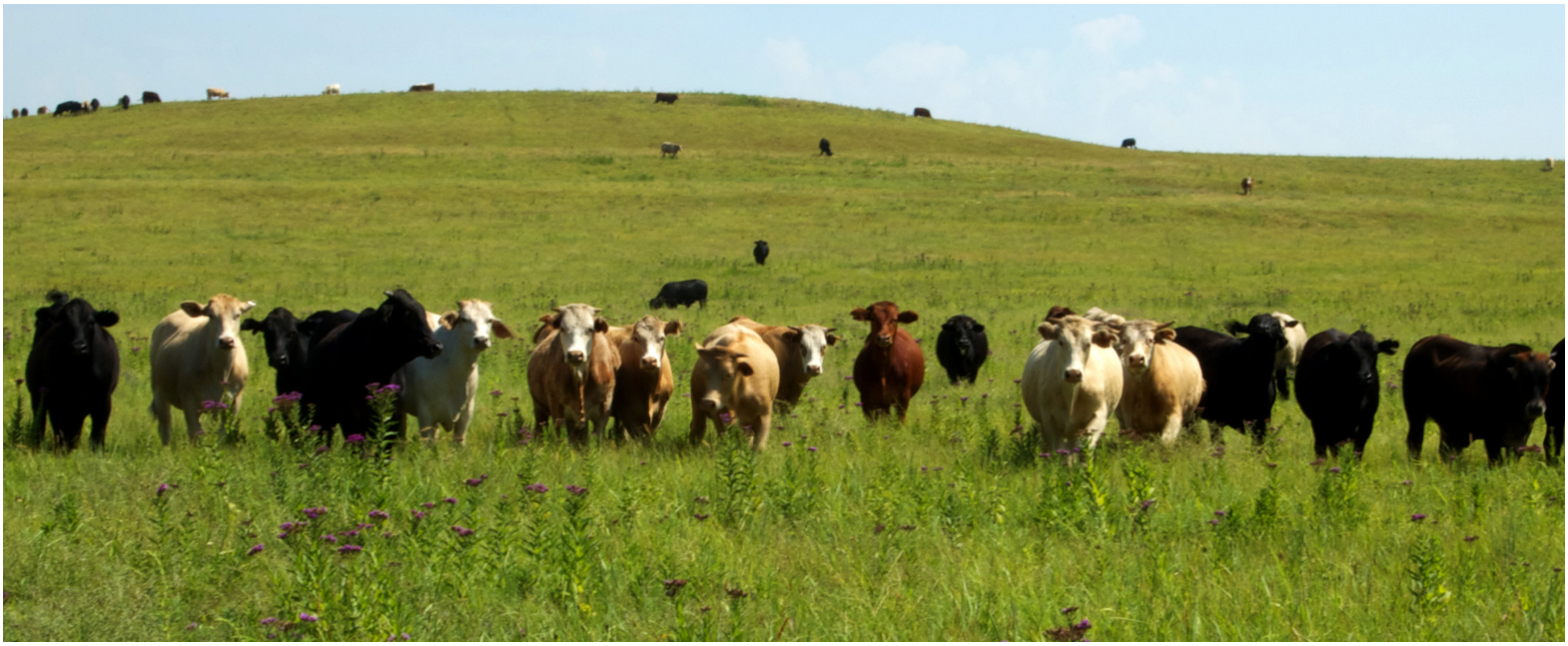
We can expect the use of ISDS to grow if pending trade deals go into effect and more regulatory action is taken to protect the climate. According to a recent Sierra Club report, the TPP and the Transatlantic Trade and Investment Partnership (TTIP) with Europe would expose 36 U.S. states where foreign fossil fuel investors are currently operating, to possible investor state lawsuits over government policies on fracking, offshore drilling, fossil fuel leasing on public land, and the regulation of pipelines.[30] For example, the TPP would grant investor state rights to Australian energy giant BHP Billiton, a major foreign investor in U.S. off shore oil drilling and in fracking in multiple U.S. states.

REFORMS ON ENERGY AND TRADE

Proposals to reform trade rules where they conflict with energy-related policies include those designed to:

- Provide a waiver on investor state challenges to climate policy. To address special corporate rights within agreements like NAFTA and TPP, Gus Van Harten of York University in Canada proposes that any climate agreement through the UNFCCC include a waiver on investor state dispute challenges to climate-related policy.[31] Such a waiver would protect countries involved in current or future trade deals that include ISDS provisions, to carry forward policies that allow them to reach their INDCs without fear of an ISDS challenge. Other NGOs and a growing number of legislators, such as U.S. Senator Elizabeth Warren,[32] have called for the elimination of ISDS provisions all together in trade agreements.

- Protect clean energy policies from WTO disputes. The E15 Initiative, coordinated by the International Centre for Trade and Sustainable Development (ICTSD) and the World Economic Forum, convened experts and institutions to look at the climate/trade challenge. The initiative has proposed a series of reforms that would shelter clean energy policies from WTO dispute challenges in the future.[33]



TRADE RULES VS AGRICULTURE, FOOD SECURITY AND LAND USE POLICY

Nearly 80 percent of countries' INDCs include policies and actions related to agriculture, according to the Consultative Group on International Agricultural Research (CGIAR).[34] Nearly 120 countries cited agriculture in their mitigation targets, and 126 listed climate adaptation in agriculture as a priority within their INDC. More than 60 countries listed livestock management as a priority for mitigation. Other areas of agriculture prioritized for mitigation included: fertilizer management, crop residue, and rice paddies.[35] Countries are grappling with the best strategies to both reduce agricultural emissions and adapt their food production to climate change. Yet, the policy straightjackets of current trade regimes are major obstacles.

The global food system, including agricultural production and associated land use, is responsible for one-third of global greenhouse gases, according to CGIAR.[36] The UN Food and Agriculture Organization identifies the top sources of agricultural emissions as coming from methane produced by livestock (39 percent of the sector's GHG emissions, with much of this from large-scale, confined operations) and nitrous oxide from synthetic fertilizers used to grow commodity crops, such as corn and soybeans.[37] A recent analysis by Oxfam found that the global production of five agriculture commodities—rice, corn, soybeans, wheat and palm oil—emit more GHGs than all individual countries, except the U.S. and China.[38] Livestock and commodity crop production contribute the bulk of the 5 billion tons of carbon dioxide equivalent gases emitted from the agriculture sector each year.

While agriculture's direct emissions are considerable, so are land use changes like deforestation driven by expanded agricultural production, such as increased soy production in Brazil[39] and the growth of palm oil plantations in the TPP-member country Malaysia.[40] The FAO estimates that an additional 4 billion tons of carbon dioxide equivalent are emitted each year due to deforestation associated with expanded agricultural production.[41]

Most of agriculture's global emissions are associated with the growth of an industrial model of agriculture designed to compete in global markets and take advantage of international trade rules put in place over the last several decades. Not surprisingly, global agribusiness companies sit prominently on U.S. trade advisory committees[42] and companies like Cargill and Monsanto are flexing their lobbying muscles in support of new trade deals like the TPP.[43] The forms of industrial agricultural production that suit global agribusiness tend to mirror the FAO's analysis of high GHG emitting practices: synthetic fertilizer-dependent commodity crop production, massive palm oil plantations, and large-scale confined animal feeding operations (CAFOs).

Trade rules governing agriculture have been among the most contentious areas of negotiation in nearly every free trade agreement. These conflicts center on how much protection and support governments can provide for their own farmers and food systems, without unfairly discriminating against imports from other

countries. Trade rules at the WTO, and regional deals like the TPP, also seek to harmonize food safety rules between countries, including rules governing pesticide and veterinary drug residues on food. Trade rules put extensive administrative burdens on food safety policies, demanding they be "least trade restrictive," rather than prioritizing public health and the environmental sustainability of agricultural production as criteria.

The application of intellectual property rights provisions to seeds is another aspect of trade rules particularly relevant to agriculture and the climate. Maintaining genetic diversity in crop and animal production is a critical tool for adapting to climate change, according to a report published last year by the FAO.[44] But the TPP requires all participating countries to sign on to a global seed breeders' rights treaty (known as UPOV91), which prohibits farmers and breeders from exchanging protected seeds, while empowering global seed companies like Monsanto and Syngenta.[45] The international battle over plant patenting, pitting the biotech companies versus the rights of farmers is not a new one. The biotech industry has won a favorable patent regime through the use of free trade agreements, and through the World Trade Organization's TRIPS (Trade Related Aspects of Intellectual Property Rights) Agreement. While the International Treaty on Plant Genetic Resources for Food and Agriculture adopted in 2001 protects farmers' rights and establishes a system of shared global genetic resources[46] —like most UN treaties it is considered "soft law" superseded by the "hard" law of trade agreements.

Last year, MIT researchers found that strengthening food production at the national level (sourcing less from international markets) will be essential for addressing food security concerns associated with climate change.[47] But agricultural trade rules often limit a country's ability to build strong national and local food systems. WTO rules place restrictions on the extent to which governments can support domestic farmers through certain types of subsidy programs, many of which have been characterized as "trade distorting." The rules also place limits on tariffs importing countries use to slow an influx of cheap imports that undercut their domestic production.

The devastating practice of imports entering a market at below the cost of production is known as dumping. While the WTO has an anti-dumping agreement and the U.S. International Trade Commission regularly investigates industrial dumping, (like Chinese steel dumping), actions on agricultural dumping are extremely rare. Commodity crop (corn, rice, soybean, wheat) dumping by U.S. agribusiness was rampant in the first 10 years of the WTO.[48]

Increased dependence on international markets for agricultural food imports made some countries more vulnerable to global price spikes; we saw this effect most clearly in 2007-2008 with a dramatic increase in global hunger.[49] Climate change is expected to disrupt agricultural production, therefore increasing food price volatility in years to come. As a result, agribusiness firms are urgently incorporating climate risks into their business models. For example, Cargill is working to reduce its carbon footprint, while also investing in climate science research and policy development to increase climate resilience in agricultural supply chains.[50]

Among developing countries, food reserve strategies are regaining traction.[51] A centuries-old strategy of putting food (usually storable grains and beans) aside in times of plenty for times of scarcity, food reserves are seen as particularly critical for vulnerable, food import-dependent countries. Yet WTO rules have routinely conflicted with various approaches to food reserves; the most recent skirmish is over India's National Food Security Policy Act.[52] Here again, the U.S. government has threatened to challenge a locally-oriented program designed to benefit local farmers, while addressing national food security concerns.

Land use and domestic ownership of land are also heavily influenced by trade and investment rules. Because trade and investment rules have eased restrictions on the movement of capital between countries, land has become an attractive asset for international investors. Trade and investment rules are thus increasingly linked to "land grabs"—large-scale land leases or purchases by foreign corporations or governments to gain access to agricultural or forest land, water and other natural resources.[53]

Investment rules require "equal treatment" for huge multi-national investors and local investors. And investor state provisions in agreements like NAFTA and TPP grant those foreign investors special legal rights. According to researchers from Tufts University, free trade deals limit the ability of governments to address land grabbing and to implement the Voluntary Guidelines on the Governance of Land Tenure (which set guidelines on appropriate land investment) established by the UN FAO.[54] Many recent land grabs have been driven by a rush to control scarce resources

in the wake of the 2007-2008 food price crisis and in the face of expected global supply chain disruptions caused by climate change.

PROPOSED REFORMS ON TRADE AND AGRICULTURE

Climate-focused trade reforms can benefit from substantive reform proposals that have emerged from agriculture and food security circles over the last several decades.

- **PROTECTIONS AGAINST DUMPING.** Developing countries continue to push at the WTO[55] for expanded use of what is called a Special Safeguard Mechanism, which would temporarily allow those countries to raise tariffs to block surges in dumped imports that threaten to undercut their farmers and food system.

- **FOOD RESERVES.** The G-33, a group of net-importing developing countries, have advanced a proposal at the WTO that would allow countries to create and operate food reserves.[56] Other proposed WTO-related reforms focus on eliminating export subsidies (which give big agricultural exporters an advantage); and on reforming food aid programs in ways that will incentivize local food systems.

- **HUMAN RIGHTS PROTECTIONS.** The Paris climate agreement reaffirms human rights commitments in its preamble.[57] There is a large body of work focused on how human rights law should be integrated within trade rules, including substantive reforms to the WTO's Agreement on Agriculture.[58] The UN Special Rapporteur on the Right to Food has outlined principles for conducting a human rights impact assessment that governments should undertake on all current and future trade agreements.[59] For example, the Economic Commission for Africa has authorized a human rights assessment for the proposed Continental Free Trade Agreement for Africa.[60]

- **PROTECTING FARMERS' RIGHTS**. To counteract restrictive patent laws embedded in trade deals, farmers have fought to protect their rights on seeds through the International Treaty on Plant Genetic Resources, which grants farmers the right to save and share seed.[61] In 2012, the FAO's Committee on Food Security's High Level Panel of Experts called for countries to adopt the International Treaty on Plant Genetic Resources for Food and Agriculture and urgently implement provisions on farmers' rights to conserve and curate genetic resources to adapt to climate change.[62] The UN Special Rapporteur on the Right to Food has been particularly critical of trade agreements, like the TPP, that require strong intellectual property protections for global seed companies.[63]

- **GUARDING AGAINST LAND GRABS.** There have been a number of efforts to introduce new global policy guidelines to counteract legal challenges tied to trade and investment rules. The UN Committee on Food Security (CFS) went through a several-year process to establish Voluntary Guidelines on the Responsible Governance of Land Tenure.[64] These guidelines for national level governments help protect the rights of their own people to own land, forests or fisheries in the face of the growing influence of outside, foreign investors buying land around the world.[65] The Voluntary guidelines are starting to be used by governments in Latin America to manage land acquisitions in order to protect the rights of local people, human rights, food security and the environment.[66]

TRADE RULES VS. CARBON PRICING AND REGULATION

> "The interplay between a climate change agreement and expanding international trade poses an important policy conundrum: behind every trade transaction there is a production process and, in turn, associated greenhouse gas emissions. Policies that modify trade can influence emissions, while policies for reducing emissions can also influence trade." A 2015 policy brief by the UN Commission on Trade and Development.[67]

As we enter into this new era of post-Paris climate policy, approaches including a carbon tax or carbon markets will undoubtedly be affected by trade rules. Pricing carbon emissions is often seen as a more politically acceptable approach than simply regulating GHG emissions. Despite well-documented problems with carbon markets, including fraud, environmental justice concerns, and the inability to reach or sustain a price of carbon high enough to spur investments in renewable energy and reduce emissions, market-based approaches for emissions reduction are strongly encouraged within the Paris climate accord.[68] According to the World Bank, TPP countries are embracing a variety of carbon pricing policies.[69] TPP countries that already have some type of carbon pricing policy in place include the U.S., Mexico, Canada, Japan, New Zealand, and Chile. Vietnam is exploring setting up a carbon market.

States and local governments in several TPP countries have also enacted carbon pricing policies, according to the International Carbon Action Partnership.[70] The U.S. is currently home to the California carbon market (which now includes Canadian provinces Quebec, Ontario and Manitoba) and the Regional Greenhouse Gas Initiative, a cap-and-trade system between nine northeastern states. We can expect these market-based policies to grow - a recent U.S.-Canada joint statement committed to greater collaboration in support of carbon market provisions contained in the Paris agreement.[71]

The practice of moving GHG emissions from one country to another, without actually reducing the total level of global emissions, (aka carbon leakage) remains a serious problem for carbon taxes and markets however. As Satoshi Yoshida at the Center for International Environment and Resource Policy at Tufts University writes: "Emissions leakage is an essential issue in international efforts to combat climate change. If it remains unaddressed, it will continue to offset the emissions reduction efforts of countries with mitigation policies, eroding the effectiveness and credibility of both domestic climate change policy and international climate change agreements."[72]

The need to assess and address carbon leakage is becoming more urgent as complex carbon markets are established. While many INDCs mention a variety of climate policies, they do not address carbon leakage nor do they offer solutions to it. In 2017, the world's biggest GHG emitter, China, will launch its carbon

market—expected to be the largest in the world. As a country with investments and businesses all over the world, the design of China's carbon market and how it addresses carbon leakage will be crucial.

The regulation of methane emissions from huge dairy operations provides a glimpse into some of the potential challenges around GHG leakage and the TPP. California dairy farms emit an estimated 25 percent of the state's total methane emissions.[73] In the Spring of 2016, the California Air Resources Board proposed to regulate new and existing dairy farms in the state as part of its climate policy. The TPP is expected to increase trade in dairy products (including milk powder), a potential boon for the New Zealand dairy giant Fonterra.[74] The company is the world's largest dairy exporter, accounting for one third of global dairy exports.[75] The USDA projects that the TPP will increase dairy imports into the U.S. by as much as 20.5 percent by 2025.[76] Conceivably, if California begins to regulate methane emissions from dairy operations, the TPP could facilitate some level of offshoring of methane emissions associated with dairy production from California to New Zealand. And while much of New Zealand's dairy production is more pasture-based than the U.S., expanded production in New Zealand has been closely linked to deforestation—as we'll explore later.

One leading proposal to address carbon leakage is through border taxes or tariffs, though doing so would run counter to the trade liberalization goal of tariff elimination. The rationale behind such proposals is simple: the market does not value lower emissions unless emissions become expensive. Coordinated policies that internalize the real cost of carbon could occur at the point of production or at the border. Border taxes could help enforce domestic climate policy by removing the cost advantage of exporters who do not factor in carbon costs into their production choices and processing methods.

Proposals to use some version of border taxes have come up in a number of climate policy debates, including the failed U.S. climate bill in 2009.[77] But if carbon taxes are put in place and/or carbon markets are dramatically reformed to tighten the emissions cap, expect the issue of carbon-related tariffs to emerge. And with them, challenges to their trade legality.

In order to avoid conflicts with WTO rules, some trade law experts have called for the creation of climate clubs, which would include the larger polluting countries at the WTO who account for the bulk of greenhouse gas emissions. The countries within the climate club would be granted some exceptions for carbon tariffs or border taxes that would ordinarily be challenged under the WTO's Most Favoured Nation principle, which prevents discrimination among trading partners.[78]

Other climate-related policies that could be effected by trade rules include eco-labeling (labeling according to environmental criteria). For example, the use of dolphin safe tuna and Country of Origin labels for meat products have already been struck down by the WTO as discriminatory. While those measures were not intended to address climate goals, the fact that labeling where and how a product was produced were deemed illegal under WTO rules raises concerns for similar measures down the road. For example, green consumer labels related to climate goals could well be vulnerable to challenge. Already under consideration by the WTO are rules related to "green" products, such as harmonizing regulations of green technologies, environment-friendly government procurement, transfer of green technology through Intellectual Property rules; and encouraging green subsidies.

Trade and Climate - Two Troubling Paths

The splintered approach of trade and climate change policies is evident in two other multilateral trade negotiations underway that could have important implications for the climate. The first, called the Environmental Good Agreement, is being negotiated by 17 countries at the World Trade Organization. Its goal is to lower tariffs, thus facilitating trade on goods that benefit the environment such as products related to clean energy production and energy efficiency. The EGA has fallen under criticism for being negotiated in secret, missing a strong definition of what qualifies as an environmental good, and lacking clear criteria or process for product selection for tariff reduction. An analysis by Transport and Environment identified 120 products that were being included within the EGA that had little or no environmental benefit.[79] Examples include products containing asbestos, parts for nuclear reactors, bamboo chopsticks and brooms, and aviation engines. Not surprisingly, the EGA negotiations are temporarily stalled over these issues.[80]

Twenty-three countries, including the U.S., are engaged in secretive negotiations of the Trade in Services Agreement (TISA). While TISA covers services like banking, health care and transport, it also includes an annex on Energy Related Services (ERS), which covers government programs related to energy. The draft ERS text, published by Wiki-leaks, grants foreign companies equal access to energy production and systems, and offers corporations an opportunity to give input on energy regulations prior to adoption, according to an analysis by Public Services International.[81] PSI points out that TISA adopts a principle of "technological neutrality," denying regulators the right to distinguish between solar, nuclear or fracking when it comes to energy. The TISA approach is consistent with past and future trade deals, including the TPP, which undercut the sovereignty of governments to legislate and govern domestic energy production—in particular, the ability to support local businesses and create green jobs.

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THE TIP OF THE TPP ICEBERG

> For climate polluters, regulations may be barriers to trade; for the rest of society they are an urgent imperative to redress this massive failure (climate change).
> –Tufts economist Frank Ackerman[82]

We've explored a number of ways trade rules and the TPP specifically could hinder efforts to address climate change. But the TPP is a sprawling document, 30 chapters totaling more than 5,000 pages. When looking at the agreement from a climate impact lens, it becomes clear that many of the chapters could in various ways, big and small, impact the climate. In this section, we'll dig into some of the details of the agreement.

Although TPP is a trade agreement, only a fraction of it is actually focused on direct trade-related policies such as tariff reduction. What the TPP does more of, is to venture far beyond direct trade related policies and into the realm of governance more broadly. The *Wall Street Journal* reports, the TPP is not as significant in terms of its economic impact, as it is in "how it restricts its members' domestic sovereignty."[83] Most of the chapters establish common rules and regulations to which each country will abide to facilitate trade and ease foreign ownership by corporations and financial institutions. The inclusion of provisions on financial services, intellectual property, government procurement and foreign investment, makes TPP a truly sweeping agreement.

We've previously discussed the broad and chilling impact of investor state provisions within the TPP that empower corporations to directly and legally challenge government policies to address climate change. And we've outlined how intellectual property rules for seeds within the TPP could impact agricultural responses to climate change. Countries should begin a chapter by chapter analysis of how the TPP could impact their future climate goals before ratifying the proposed agreement. Here, we explore a handful of TPP chapters that might affect efforts to address climate change:

The trade part of TPP

Tariff reduction has been traditionally considered the heart of trade agreements. The tariff cuts within the TPP cover a variety of goods, from agricultural to forestry to mining to auto parts.[84]

Expanded trade in energy intensive and resource extractive sectors could have important impacts on the climate. For example, the TPP reduces palm oil tariffs for big importers like Vietnam and Japan. Malaysia is one of the biggest palm oil producers in the world, where the expansion of palm oil plantations has contributed to mass deforestation. An expansion of the palm oil trade in Malaysia would likely adversely affect Malaysia's ability to reach its emissions reduction goals.

The TPP also reinforces WTO provisions that could prohibit restrictions on fossil fuel exports, according to an analysis by Friends of the Earth.[85] Currently, the

U.S. Department of Energy needs to approve all liquefied natural gas (LNG) exports to ensure they are in the interest of the U.S. But under TPP, all exports of LNG would be automatically approved to all TPP countries, including Japan, the world's largest LNG importer.[86] Increased LNG production has been linked to rising methane emissions in the U.S., according to the most recent Environmental Protection Agency emissions inventory.[87]

In the case of agriculture, Japan and Vietnam were the primary targets of global meat companies for tariff reduction or elimination on meat and dairy products that are linked to high GHG emissions. The TPP lowers tariffs for beef and pork for both countries though not as much as the global meat companies would have liked. The recent International Trade Commission assessment found that lowering tariffs would result in a 2.6 percent increase in overall U.S. agriculture exports, and a 1.5 percent increase in agricultural imports. Yet, ITC projections have routinely over-estimated economic gains for the U.S. Similar promises for gains for U.S. farmers and rural communities have fallen short for nearly every free trade agreement since NAFTA. A recent analysis of six free trade agreements starting with NAFTA by economists at the University of Tennessee, found that the U.S. collective agricultural trade deficit with countries participating in those agreements was $1.6 billion.[88]

Export-driven meat production often requires high-emission Confined Animal Feeding Operations (CAFOs). CAFOs are characterized by holding large numbers of animals in confined indoor facilities, producing unmanageable amounts of animal waste. The result is high levels of animal-derived methane emissions, that could rise with more exports to TPP countries.

With the levelling off of U.S. meat consumption, expansion of CAFO meat production is now often geared toward export. For example, JBS USA recently announced the $100 million expansion of a Utah-based meat processing complex, with some 20 percent of the facility's production intended for exports to countries like Japan and Mexico.[89] Prestage, one of the country's largest pork producers, is exploring locations in Iowa for a new mega processing plant with "exports in mind."[90]

But the big meat companies operating in the U.S. are truly global, operating in multiple TPP countries. Cargill has opened a new feedmill in Vietnam and is expanding its Australian beef operations.[91] Brazilian-owned JBS has operations in the U.S., Australia and Canada. Chinese-owned Smithfield Foods and Tyson Foods have major operations in the U.S. and Mexico. This multinational strategy positions these companies to benefit from the TPP in ways that farmers in any one particular country do not. While tariff reductions benefit global meat company profits by encouraging trade, the farmers lose protections that the tariffs had once provided; such as protection from cheap imports —an issue for farmers in many TPP countries, particularly Japan's pork and beef producers.

The TPP also limits the ability of developing countries to slow a surge of cheap imports that could undermine their food system. Article 2.26 of TPP on Agricultural Safeguards eliminates the rights of TPP countries under the WTO to apply special tariffs in the event of import surges (the so-called Special Safeguards Mechanism that developing countries are pushing for at the WTO). This could be significant from a climate adaptation and resilience perspective, as developing countries attempt to strengthen their national-level food systems to cushion against global disruptions expected from climate change. This SSM section at the WTO could become more important if the TPP expands to include additional developing countries; Thailand, Indonesia, Cambodia and South Korea have already expressed interest.

Regulatory Coherence

The TPP is the first U.S. free trade agreement to include a Regulatory Coherence chapter.[92] The chapter's ostensible objective is to promote best practices in regulation, avoid duplication, assess alternatives and expand opportunities for stakeholder input. While these goals may sound reasonable, the policy implications are anything but. The chapter, which emanated from corporate lobbyists, creates what amounts to an early warning system for the formation of regulations in all TPP countries, including state regulations.

TPP countries will be required to fully report publicly on regulations under consideration for the following year, and provide justification and pre-implementation impact assessments. Regulations will be periodically reviewed to determine whether they are still necessary. The Chapter includes provisions for a Committee on Regulatory Coherence where regulations in development can be directly challenged.

Because TPP regulatory cooperation requirements will apply to sub-federal regulations, U.S. state regulatory processes, now the most innovative in terms of climate

related policies, will also come under review. The TPP will require the federal government to give advance notice of state-level proposals for "new technical regulations and conformity assessment procedures" where those proposals "may have a significant impact on trade." The federal government will be obligated to hold "technical discussions" upon request of any other TPP country. Internal processes for how such requests would be generated are unstated. Though the intended outcome of technical discussions is to harmonize state, federal, and international regulations and standards, TPP provisions don't specify how—or if—state policymakers will be consulted.[93]

TPPs Regulatory Coherence chapter is designed to provide a means by which corporate interests can head off proposed regulations, even if such measures are designed specifically to meet climate goals.

Food Safety (Sanitary and Phytosanitary Standards (SPS)

Climate change is expected to increase risks related to food safety, plant and animal health due to variances of temperatures, and the spread of animal and plant diseases.[94,95] Under the TPP, regulations regarding these risks are covered in a section called Sanitary and Phytosanitary Measures (SPS). And once again, the TPP's push toward deregulation increases climate risk.

One major concern is the inability of governments, in this case the U.S. government, to fully fund enforcement of existing SPS rules. The U.S. Food and Drug Administration has conducted less than one third of the inspections of foreign facilities exporting into the U.S. as required under the current national food safety law partially due to a lack of funding.[96] With food and agriculture exports and imports projected to increase under the TPP, the inability to effectively enforce existing food safety standards is a concern. Acute foodborne illnesses in the U.S. have been estimated to cost $93.2 billion annually.[97]

The TPP takes several steps that would limit countries' ability to regulate to ensure food safety at their border. To expedite food exports, the TPP includes a Rapid Response Mechanism to quickly resolve trade-related restrictions. But it is trade officials, not food safety experts, who are designated by the SPS chapter to lead the consultative team charged with sorting out food safety disputes. Further, the design and strict time limits set forth for rapid response give food exporters the power to demand justification from inspectors regarding decisions to restrict imports on food safety grounds. Such a mechanism gives companies yet another lever to challenge food safety regulations.[98]

The TPP also sets forth very low standards for using scientific data in assessing risks of new food and agricultural technologies that go beyond WTO standards. Rather than rely on publicly published research within the peer-reviewed literature, the TPP gives particular weight to private industry studies submitted under the protection of Confidential Business Information requirements.[99] This is of particular concern as we enter into the age of complex and powerful new gene editing technologies through synthetic biology, of which most countries (including the U.S.) do not have a regulatory regime established to protect public health and the environment.[100] The result is another mechanism for companies to tilt the regulatory playing field in their favor as those standards are developed.

While not explicitly stated, it appears that food safety disputes would be eligible for ISDS challenges by corporations, given the very broad definition of "investment" in the Investment Chapter. The TPP SPS chapter does include a country-to-country dispute settlement mechanism that is expected to be much quicker than at the World Trade Organization level, and compensation is expected to be more rapid.[101] All these elements give food company exporters more tools to challenge regulatory efforts to ensure food safety.

Financial Services

Poorly regulated financial markets can negatively impact our ability to respond to climate change. Destabilized financial markets undermine food security and hinder emerging markets for renewable energy. Yet, instead of strengthening policies intended to stabilize financial markets, TPP's financial services chapter (which governs financial markets) does just the opposite, granting financial firms expanded power to legally challenge national level regulations intended to limit excessive speculation. The TPP grants foreign financial firms the right to use ISDS tribunals exploiting the broadest legal claim: the guaranteed "minimum standard of treatment."[102,103] The TPP includes banks based in countries that haven't previously been granted ISDS power (Australia, Brunei, Japan, Malaysia, New Zealand and Vietnam). The push for expanded ISDS protection

followed intensive lobbying by Wall Street firms, according to e-mails between the U.S. Trade Representative and a Goldman Sachs lobbyist.[104]

The 2007-2008 financial crisis provided a sobering lesson on the devastating global impact of poorly regulated financial markets. The extraordinary influence of speculative money in commodity index funds contributed to price increases for food and energy worldwide. Commodity market price formation was, literally, no longer tied to actual supply and demand and new financial instruments, including derivatives, began tying commodity prices to other commodities and financial markets.[105]

And it isn't just financial markets that are vulnerable to financial speculators. Carbon markets can be too.[106] The California carbon market recently cited the influence of speculators as a contributing factor to the unexpected drop in their carbon price.[107]

The TPP could also limit other financial regulation, including opening up capital controls (the regulation of the movement of capital between countries) to ISDS challenges, according to Public Citizen.[108] Capital controls could be used as tools to help stabilize a country's financial markets in the wake of climate-related destabilization. These controls can take a number of forms, including tariffs, transaction taxes or outright prohibitions on certain kinds of capital exports.

The concern about financial destabilization related to climate change is evident in the recent decision by the international body that monitors the financial system (the Financial Stability Board) to form a special task force on Climate-Related Financial Disclosure. The task force will make recommendations to governments about the need for corporations and large asset holders to disclose their climate-related destabilization risks to investors and shareholders.[109]

Opening the door for more GMO crops and GHG emissions

Numerous international reports, from the UN Food and Agriculture Organization, to the International Assessment of Agricultural Knowledge, Science, Technology for Development (IAASTD),[110] to the most recent International Panel of Experts on Sustainable Food Systems[111]—have pointed to the imperative of greater biodiversity in agricultural systems to adapt to climate change. Less diversity and more homogeneity results in agricultural systems vulnerable to extreme weather, new pests and weeds, all of which are expected outcomes of climate change.

The TPP sets forward rules to expand the use and acceptance of genetically modified organisms (GMO)s within current and future TPP countries. The growth in the use of GMOs further entrenches an industrial model of food production that is both high GHG emitting and less climate-resilient. Current GMO crops are primarily commodity crops—those that can be warehoused for at least a couple of years and sold on the global market, such as corn, soybeans and cotton. GMO corn and soy are heavily dependent on synthetic fertilizers (a major GHG contributor), and are largely used as animal feed for the meat and dairy industry (also major emitters). TPP countries like the U.S., Canada, Australia and Chile are major growers and exporters of GMO crops. Other countries, like Malaysia, have approved some GMO crops, while others like New Zealand are GMO-free.

The TPP is the first agreement to specifically identify rules for trade in GMOs. As important, the GMO rules are not within the food safety section of the agreement, but rather within the chapter related to tariffs (Market Access and National Treatment) with the goal of expediting the import of GMOs. The result is that human and environmental safety criteria involving GMOs and products derived from new technologies like plant synthetic biology have been relegated to market access criteria.

Global trade in GMOs is currently curbed by the fact that different countries have different regulatory approval systems—and some GMOs may be approved in one country, but not another. For example, in 2013 China rejected a shipment of U.S. corn because it contained a Syngenta GMO corn called Viptera—that had been approved in the U.S., but not China. The rejection shook the markets, lowering corn prices for U.S. farmers—hundreds of whom have sued Syngenta for damages.[112]

Another challenge with GMOs is cross contamination with test plots. In July 2016, the U.S. Department of Agriculture discovered an unapproved GMO wheat from Monsanto in a field in the state of Washington. The GMO wheat has not been approved for sale in the U.S. or for export. Japan and South Korea immediately took steps to block U.S. wheat imports.[113] The TPP's "Trade in products of modern biotechnology" section targets these types of efforts to restrict

trade among countries with different regulatory requirements.

The TPP's biotechnology section tries to avoid instances where shipments are rejected at the port because of a low level presence (LLP) discovery of an unapproved GMO. By using the TPP's rapid response mechanism, the import of unapproved "low level presence" GMO shipments would be expedited, as there would be insufficient time to conduct a thorough scientific risk assessment with a "low level presence" shipment waiting to clear the port of entry.[114]

Half of the TPP countries are party to the Cartagena Protocol (Malaysia, Vietnam, Japan, Peru, Mexico and New Zealand) which grants countries the right to reject GE crops that have not met their approval. But the biotech industry is happy with the TPP section, which outlines "transparency" measures for GE crop approvals, procedures to follow if an LLP is discovered, and sets up a Working Group on products of modern technology where countries can work through issues where GE approvals conflict and potentially move toward a common set of standards.[115] According to an analysis by Malaysia-based Third World Network, the TPP's inclusion of a procedure for LLP, undermines country policies that have a zero tolerance rule—like those of Malaysia and Peru.[116]

Government Procurement

Governments use preferential procurement policies for myriad reasons, among them to create new jobs, spur community development, shift income inequality, unblock access to capital and protect the environment. In the case of climate change, governments use preferential procurement policies to promote renewable energy development or local food systems, among other things. Trade agreements, however, work against this long recognized form of policy making.

Preferences for green jobs in the renewable energy sector have already faced successful legal challenges at the WTO.[117] Local renewable energy production and requirements, as well as other green purchasing requirements are likely to run into new obstacles under the TPP. And while the TPP does not currently cover sub-federal public procurement programs, the agreement does require participating countries to begin negotiations to expand coverage, including at the state level, within three years.[118]

Under fast track trade authority, the Obama Administration must notify Congress of any changes to current U.S. law under the TPP. In its notification to Congress on April 1, the USTR identified federal procurement regulations, particularly the "Buy America" purchasing preferences, as having to change as a result of the TPP.[119] These changes to U.S. law would open up procurement contracts that give priority to U.S. companies, to now include companies from other TPP countries. These types of TPP-related requirements run counter to many green jobs-oriented renewable energy programs in the U.S. and other countries, designed to give preferences to local businesses.

Environment Chapter

> "The TPP's Environment Chapter is neither pioneering nor an historic opportunity to advance conservation and environmental protection across the Asia-Pacific region. It is, in fact, a document filled with vague and empty promises."
> –Environmental Law Professor Chris Wold[120]

The TPP does contain an Environment Chapter, but some TPP commitments on the environment are actually weaker than in previous U.S. Free Trade Agreements.[121] In 2007, Congress reached a bipartisan agreement to include obligations to seven multilateral environmental agreements in future FTAs.[122] The TPP simply reaffirms already existing commitments to those agreements, and only includes the strong requirement of Parties to "adopt, maintain, and implement" for the Convention on International Trade in Endangered Species.

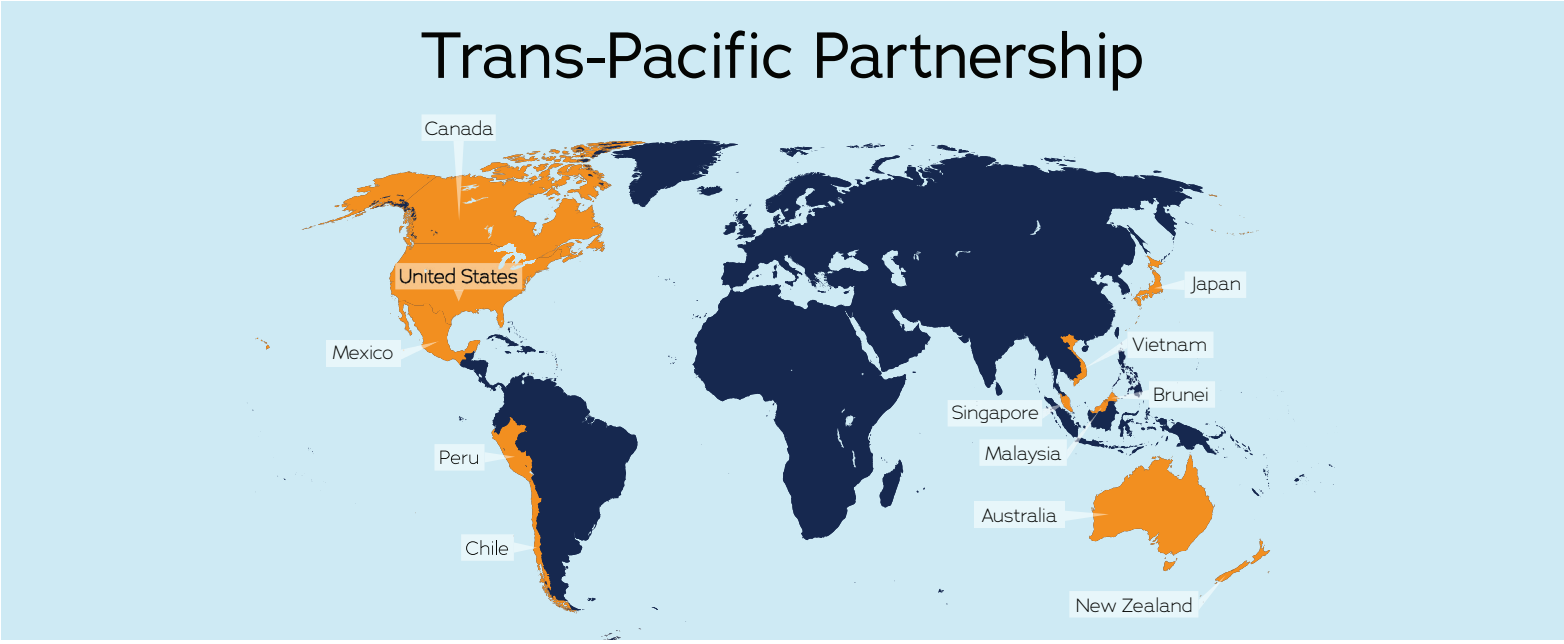
The Environment Chapter is not noticeably different than other FTAs that the U.S. has signed—which have been much criticized for their lack of enforcement. According to the Center for International Environmental Law (CIEL), "While past agreements have contained similar enforcement provisions for the environment chapter, no Party has ever brought a formal case based on the environmental provisions of any U.S. FTA—despite documented violations."[123]

Some TPP environmental commitments are actually weaker than those in previous U.S. Free Trade Agreements.[124] For example, the illegal logging provisions in the U.S.-Peru FTA are "significantly more precise and better targeted towards specific problems than anything found in the TPP," writes Wold.[125]

Even precise targets don't guarantee enforcement, however. The U.S.-Peru FTA includes a Forest Annex designed to impose criminal and civil liability for those who practice illegal logging – a long-standing practice in Peru. In 2012, the Environmental Investigation Agency and CIEL documented violations of the Forest Annex and called for the USTR to act. However, despite considerable evidence that illegal logging continues and illegal timber is being exported, the U.S. Trade Representative has refused to enforce the agreement – with serious ramifications for the climate and Peru's forests. While the two countries created an action plan, no legal action was taken.[126]

The TPP will establish a Committee on Environment, designed to discuss disputes and enforcement issues. The Committee, which is primarily a negotiating space, is made up entirely of the member countries, and offers no third party mechanism, as exists under NAFTA and DR-CAFTA. As Simon Terry of the Sustainability Council of New Zealand writes, "Governments have little incentive to press other governments on matters that affect only the environment in the other government's territory. It involves spending diplomatic capital with a country on something for which there is no domestic benefit."[127]

The voluntary enforcement and weak environmental commitments of the TPP stand in stark contrast to the legal and binding obligations under ISDS.



TPP COUNTRIES AND CLIMATE CONCERNS

As we've previously discussed, countries signing the Paris climate agreement made specific commitments to reduce greenhouse gas emissions by 2030 and each described how they would meet those goals. The INDCs are voluntary and countries use their own metrics to assess progress. There is no indication, however, that countries who signed the TPP considered how the trade deal might impact their Paris climate commitments.

Here we take a brief look at TPP member countries' climate commitments, their major sources of GHG emissions, and some high level considerations for how those commitments might be effected by the TPP. This overview is far from comprehensive.

Australia

INDC commitment: Australia has committed to a 26-28 percent reduction in GHG emissions below 2005 levels by 2030.

Due to its reliance on coal-fired power plants, Australia is one of the largest GHG emitters per capita in the world. It is also the world's third largest producer of liquefied natural gas (LNG), and is projected to become the world's largest supplier by 2019.[128] Australia is the largest exporter of coal and iron ore in the world.[129]

While the U.S.-Australia free trade agreement does not include investor state provision, the TPP will expose Australia to U.S. based investor state challenges for the first time. A government commission is raising questions about the benefits of TPP broadly, but in particular new threats of legal action by foreign corporations through ISDS.[130] Even without the passage of TPP, investor state has already come up over a proposed coal mine. U.S. investors in an Australian mining company are calling for arbitration over the Australian government's decision to revoke a coal exploration license.[131] The U.S. investors, which include Sparta Group and Taurus Funds Management, are encouraging the U.S. Trade Representative to pressure Australia into an arbitration case, or an offer of compensation.[132] While the case has yet to be sorted out under the U.S.-Australia FTA—an investor state case could be brought directly under the TPP.

Foreign investors from TPP countries are widespread in a number of sectors in Australia. For example, multiple foreign investors are also involved in a mega Gorgan liquefied natural gas development in the northwest part of the country. A carbon capture project in Barrow Island, which has significant government support, is part of an attempt to offset some 40 percent of the emissions coming from the Gorgan project. The costly, untested carbon capture project will attempt to inject GHG pollutants more than a mile into the ground. Investors are some of the world's largest polluters including Chevron, Shell and Exxon/Mobil.[133]

Australia's biggest banks, despite verbally supporting the Paris Climate Agreement, continue to finance fossil fuel projects (oil, coal, gas and natural gas) in the country. Japanese banks were some of the biggest investors in fossil fuel projects in Australia in 2015.[134]

Agriculture and other land uses are Australia's second largest source of emissions at 18 percent. Australia hopes that agriculture exports will increase under TPP. Ruminant livestock from the country's beef and dairy sector are the single largest source of methane in Australia and produce 71 percent of methane emissions in the agricultural sector overall. China is the biggest investor in the Australian agriculture sector, and the owner of the country's largest dairy.[135]

Brunei Darussalam

INDC commitment: Brunei did not submit an INDC until after Paris, and once it did, took a somewhat different approach in its pledge. The country pledged to reduce total energy consumption by 63 percent by 2035 compared to a Business-As-Usual (BAU) scenario; to reduce carbon dioxide emissions from morning peak hour vehicle use by 40 percent by 2035; and to expand forest cover.

While its population is small, at less than a half million people, Brunei has the largest carbon footprint in Southeast Asia. Brunei also has significant rainforest coverage and its deforestation rate is already the lowest in Southeast Asia, despite its growing urban sprawl.[136]

Brunei is entirely energy self-sufficient and exports the bulk of its natural resources. Crude oil and natural gas production comprise around 90 percent of the nation's exports and government revenue.[137] Currently, its largest markets for energy exports are other Asian nations, including Japan,[138] although the TPP agreement is likely to expand this portfolio.

Canada

INDC commitment: Canada has pledged to reduce greenhouse gas emissions to 30 percent below 2005 levels by 2030.

Canada's carbon footprint per capita is quite high, at 15.7 tonnes, making it second only to those of the United States and Saudi Arabia, both at 16.6 megatonnes.[139]

More than 50 percent of publicly listed mining companies (1,500) are based in Canada and Canadian mining corporations operate in more than 100 countries around the world.[140] In manufacturing, production of nitrogen fertilizers and chemicals are Canada's two biggest emitters.[141] Crude oil and related products, such as liquefied petroleum (propane) and refined petroleum are among Canada's largest exports, as is liquid natural gas (LNG). Most of the country's petroleum comes from Alberta's tar sands, which is connected to the Keystone XL Pipeline. Producing oil from tar sands emits about 17 percent more greenhouse gases than commercial oil drilling in the U.S. as the crude product must be heated to separate the sand from the bitumen, a thick, tarry crude oil.[142]

Canada has been a hotbed for investor state suits. Of 77 investor-state claims under NAFTA, 35 have been brought against Canada. Canada lost seven cases brought by U.S. corporations and making a combined payment of $200 million, including a judgment this year to pay $17.3 million to Exxon-Mobil.[143] Several NAFTA-related cases focus on Canadian policies regulating offshore drilling, mining and fracking.[144] The TPP will increase Canada's exposure to future ISDS cases.

Chile

INDC commitment: Chile has committed to reducing its emissions intensity (emissions relative to gross national product) by 30 percent in 2030 from 2007 levels, and pending adequate international funding, would increase emission reduction targets to between 35 and 40 percent.

Chile's top five exports are refined copper, copper ore, sulfate chemical wood pulp (used to make paper products), and fish fillets.[145] Energy intensive mining has long been the mainstay of the Chilean economy and continues to dwarf other industries, with copper being by far the biggest. In 2013, copper accounted for 60 percent of the country's exports.[146] Chile's copper industry is currently a mixture of public and private firms. The state-owned firm Codelco competes directly with private companies. In preparation for the TPP, Codelco is already opening itself to private investors.

The copper mining industry uses vast amounts of water. The melting of Andean glaciers (linked to climate change) is already affecting water systems, and public debate is growing about private ownership of the diminishing fresh water supply. Environmental and indigenous groups have called for the government to repeal the country's water code, which says the government can grant water use rights to private companies free of charge, while allowing the same companies to buy, sell, and rent water use rights. Foreign mining companies have been benefitted from this code, even as local communities, many of them indigenous, are deprived of water.[147] There have already been several high profile water privatization cases utilizing ISDS, most recently involving the global

water giant Suez and the government of Argentina's actions to block water price hikes.[148]

Japan

INDC commitment: Japan has committed to reducing GHG emissions by 26 percent below 2013 levels by 2030.

A significant portion of Japan's emissions are associated with imports—with the high GHG emitting production taking place in other countries. That could increase with the lifting of the U.S. ban on oil exports in 2015. The U.S. move was quickly followed in January, 2016 by Cosmo Energy Holdings becoming the first Japanese company to import U.S. oil.[149] Japan is the world's largest importer of liquefied natural gas (accounting for 35 percent of global LNG trade), and is positioning itself to become a major LNG trading hub.[150]

Japan has become increasingly dependent on coal since the Fukushima nuclear disaster, further increasing the country's reliance on fossil fuel – often extracted outside of the country. Forty-five new energy efficient coal-fired power plants are in the planning stages.[151] In February, Japan's Environment Ministry announced that it would approve new coal-fired power plants in exchange for reductions in greenhouse gas emissions by energy utilities.[152] The move was criticized by Japanese environmental groups as a step back in efforts to reduce high greenhouse gas emitting coal production.

In agriculture, Japan has provided a large market for global meat companies, and is the largest buyer of U.S exported beef and pork. The TPP will force Japan to lower its beef, poultry and pork tariffs, though not as much, nor as fast, as U.S.-based companies had hoped. Meat and dairy companies based in Australia and New Zealand are also hoping to benefit from TPP to target Japan's market. Japanese farmers are concerned the TPP will drive domestic farmers off the land. "Japanese farmers are key to taking care of the national landscape, and they are an important link between the people and nature. If they go away, what will happen?" a Japanese farmer told the *Los Angeles Times*.[153]

Malaysia

INDC commitment: Malaysia has committed to reducing GHG emissions intensity by 35 percent by 2030 relative to emissions intensity in 2005.

Malaysia has the highest rate of deforestation in the tropical world, much of it in the state of Sarawak, according to the UN REDD program.[154] And a big part of that deforestation in linked to expanded palm oil production.[155] Seven TPP countries currently use tariffs on palm oil imports, according to the Sierra Club. Those tariffs would be reduced or eliminated under the TPP, thereby encouraging further expansion of palm oil production and associated deforestation in Malaysia.[156]

Efforts to achieve more sustainable palm oil production in Malaysia have had mixed results. The Malaysian company, IOI Group, was recently expelled from the industry-certifying organization Roundtable on Sustainable Palm Oil (RSPO) for environmental and labor violations.[157] IOI Group is the second largest palm oil producer in Malaysia and a major supplier to Cargill, Bunge and Japan-based Kao corporation.[158] Palm production itself also leaves behind immense wastewater lagoons, which release an enormous amount of methane. Based on a 2014 study by the University of Colorado, palm wastewater lagoons release the equivalent of the GHG emissions from 22,000 cars annually.[159]

Controversy over Malaysia's human rights record as well as allegations of high level corruption with its Prime Minister continue to raise questions on whether it should be eligible to join the TPP, and whether it will be able to implement the agreement.[160,161]

Mexico

INDC commitment: Mexico has committed to an unconditional reduction of GHGs by 22 percent; and reduction of black carbon (soot) by 51 percent below its business as usual scenario by 2030. Mexico has also pledged that, with international support, it will commit to a 36 percent reduction in GHGs and a 70 percent reduction in black carbon. These conditions include a global agreement on such elements as international carbon price and technology transfer to enable emissions reductions. Mexico also says its adaptation measures will have a gender and human rights component, taking into account that climate change disproportionately impacts women and other vulnerable populations.

Mexico's top exports include crude petroleum. Mexico is the tenth largest oil producer in the world. After 77 years under state ownership, in 2013, Mexico amended its constitution to open its oil and gas reserves to private investment. As a result, U.S. and

Canadian oil companies are investing billions in Mexico – as are electric companies as the country updates its power grid. The shipment of U.S.-derived natural gas to Mexico is increasing, pipelines are being built, and the two countries are exploring cross-border electric transmission projects.[162] Mexico also has sizeable untapped natural gas reserves, found mainly in its shale resources, and U.S. energy companies are already exploring its potential.[163]

Mexico has also seen significant growth in beef exports—growing six-fold since 2009—as part of a system of North American meat production, with feed coming from the U.S.[164] That growth and its accompanying emissions increase will likely continue with the opening of Japan's beef market.

New Zealand

INDC commitment: New Zealand has committed to a 30 percent reduction of GHGs from 2005 levels by 2030, and more specifically, has committed to reducing emissions in the forestry, agriculture and transport sectors.

Agriculture accounts for half of GHG emissions in New Zealand,[165] with dairy production the largest GHG contributor.[166] New Zealand is home to the largest dairy exporter in the world, Fonterra, whose exports represent about 30 percent of international trade in dairy products, and account for about one-third of New Zealand's total exports.[167] Fonterra also has investments and operations in the U.S., including a joint venture with the Dairy Farmers of America called DairiConcepts.[168]

This sizable dairy sector contributes directly to deforestation. The Ministry of Agriculture and Forestry has said that 445,000 hectares of forest (over one million acres) are under threat of clearing for pastoral use, mainly for the dairy sector.[169]

The government's TPP assessment forecasts that tariff reduction for agricultural goods will expand markets for exports, particularly dairy market access in the U.S., Mexico, Canada, and beef market in Japan.[170] The expansion of agricultural exports associated with the TPP, particularly dairy and beef, will likely impact the country's ability to meet emission reduction targets.

New Zealand is entirely non-GMO, which gives it some premium advantages in the global marketplace. TPP's Intellectual Property chapter will "require New Zealand to make changes to law and practice before we can ratify the Agreement," according to a government assessment. "New Zealand will also need to amend its plant variety breeders' rights regime within three years of TPP entering into force," specifically UPOV 91 (which the government has not joined).[171] These changes in New Zealand's law will limit the ability of farmers to share seeds.

Academics and researchers in New Zealand question the economic benefits of the TPP, in particular the expected use of Investor State lawsuits against national-level regulation. They are particularly concerned about ISDS challenges involving the regulation of foreign mining companies.[172]

New Zealand's use of carbon markets has resulted in unreliable claims of emissions reduction. An April 2016 analysis of New Zealand's carbon credits approved under its Emissions Trading Scheme found that 70 percent were either fraudulent or questionable—with many coming out of the Ukraine and Russia—raising questions about the country's commitment to GHG reductions.[173] And with the plunging price of carbon credits on the country's emissions trading scheme, forest companies have ramped up plans to deforest and expand dairy production.[174]

Peru

INDC commitment: Peru has committed to a 20 percent reduction of GHG emissions by 2030, compared to their business as usual scenario. An additional 10 percent in GHG emission reductions could occur with additional international financial support.

As home to the second largest share of the Amazon, Peru is one of the most biologically diverse nations in the world. The Amazon is one of the most important carbon sinks (capturing carbon from the air) in the world, storing more than 7 billion metric tons of carbon in 2013 (more than the U.S. annual carbon emissions).[175]

One-third of the country's emissions are linked to land use—particularly forestry, agriculture and mining.[176] These natural resource sectors include many foreign investors.

The high energy extractive mining of copper and other metals is a major sector in the country's economy. The U.S. company Freeport-McMoran is finishing up a $4.6 billion expansion of the Peru's Cerro Verde copper mine. The project will triple current production and could use up to 10 percent of the nation's electricity

once operational.[177] Another U.S. mining company, Newmount Mining Corporation, is a major investor in the controversial Conga mine project (gold and copper) in the Celendin province.[178] Yet another major copper mine project, known as Las Bambas, is owned by a Chinese corporation subsidiary based in Melbourne, Australia called MMG. That controversial mine's operator has experienced a series of violent clashes within one of the nation's poorest regions, because of the mine's pollution of local fishing and farming.[179]

Around 70 percent of Peru's Amazon is now open for oil and gas exploration. Foreign oil and gas companies, such as ConocoPhilips, Hunt Oil, Talisman Energy, and Petrolifera, have been drilling exploratory wells, although some have withdrawn from specific drilling sites for lack of significant oil or due to protests by indigenous rights groups.[180]

The oil and gas industry in Peru is also tied directly to Amazonian forest clearance and illegal logging. The clearance alone is estimated to account for about two-thirds of carbon emissions in Peru.[181] It is estimated that up to 80 percent of Peru's timber production comes from illegal logging, according to a report by the Environmental Investigation Agency.[182] A special annex in the U.S.-Peru Free Trade Agreement, entered into force in 2009, included provisions to prevent illegal logging, but many environmental organizations have charged that the provisions have not been enforced —and warn that TPP will do nothing to improve enforcement. Deforestation for palm oil plantations and specialty agriculture have also become more common. For example, Peruvian corporations have plans to deforest 23,000 hectares in the northern Amazon for palm plantations.[183]

Peru is already involved in an $800 million ISDS case involving the U.S. company Renco (a lead smelter) and restrictions on its operation, despite high levels of air pollution.[184,185] In another high profile case, a U.S. hedge fund is moving forward on an ISDS lawsuit to force the Peruvian government to pay out billions on old-defaulted bonds linked to farmland from 40 years ago.[186] The costly case highlights the growing power of financial firms to use ISDS to challenge governments directly when future profits are affected.[187]

Singapore

INDC commitment: Singapore has committed to a reduction of emissions intensity by 36 percent from 2005 levels by 2030, and to stabilize emissions, which it expects will peak around 2030.

Singapore has few natural resources, limited means of producing renewable energy, and suffers from land scarcity. It imports all of its fuel and 90 percent of its food. The largest palm oil processor in the world, Wilmar, is headquartered in Singapore.[188] Palm oil production has been associated with deforestation around the world, including in Malaysia.

By 2014, 95 percent of the nation's electricity was already coming from imported natural gas. The country is currently expanding a LNG terminal, which indicates it plans to continue relying on this energy source, while offshoring its associated emissions. As an island nation, Singapore also is recognizing its vulnerability to climate change, building sea walls along its coasts to prevent expected flooding associated with climate change.[189]

United States

INDC commitment: The United States has pledged to reduce its GHG emissions to 26 to 28 percent below 2005 levels by 2025.

According to the Inventory of U.S. Greenhouse Gas Emissions and Sinks, total U.S. GHG emissions have increased by 7.7 percent from 1990-2014. Though, they have decreased since 2005 by 7.5 percent. The energy sector (production and distribution) is by far the largest contributor of US GHG emissions. (chart on ES-17).[190]

The TPP could impact U.S. climate responses in several ways linked to the energy and agriculture sectors. As mentioned before, the Keystone Pipeline TransCanada investor state challenge highlights the growing legal exposure U.S. government entities will be under if TPP comes into effect. In January, a Canadian mining company threatened to sue the U.S. under NAFTA, for the blocking of a copper and gold mine in Alaska.[191] According to the Sierra Club, the TPP doubles the number of foreign firms to more than 9,000 that have investor state privileges in the U.S. This increased investor state legal exposure could impact more than pipeline development—it also could reduce or eliminate restrictions on offshore drilling and fossil fuel industry leasing on public lands.[192]

Under the TPP, the U.S. Department of Energy would be obligated to automatically approve ***all*** exports of Liquefied Natural Gas (LNG) to the ten other signatory countries, including Japan, the world's largest LNG importer. The proposed expansion and addition of new natural gas pipelines in the Appalachian basin will threaten U.S. climate commitments, according to study by Oil Change International.[193] Natural gas is a notoriously carbon-intensive fuel when exported, a process which requires conversion from gas to liquid then back to gas, and exportation requires expanded infrastructure. The automatic approval for LNG could catalyze the expansion of fossil fuel infrastructure. The U.S. is setting up the largest LNG export terminal in the country in southwest Louisiana and the first shipment of LNG departed for Brazil in February.[194,195]

The agriculture sector is the fourth highest emitter of GHGs in the U.S.[196] The TPP has been sold as a boon for big meat packing companies operating in the U.S., who want to pry open further the Japanese and Vietnamese markets. While the deal certainly lowers tariffs in Japan and Vietnam, those gains were smaller than the industry had hoped for. Meat produced for export comes primarily from Confined Animal Feeding Operations (CAFOs) and their associated GHG contributions. While there have not been many ISDS cases related to agriculture, growing investment of foreign-based agribusiness companies in the U.S. could increase that risk. Many of the skirmishes over CAFO sites around the country have to do with clean water and air regulations, zoning, and land management—all issues that have seen ISDS challenges in other contexts.

Finally, the U.S. has numerous local content requirements among various state-level renewable energy mandates. As previously mentioned, such requirements have been successfully challenged at the WTO in Ontario, Canada and in India. The TPP gives foreign countries, and possibly companies, another legal avenue to challenge local content provisions of renewable energy policies that would benefit the climate.[197]

Vietnam

INDC commitment: Vietnam has pledged to reduce GHGs by 8 percent by 2030, and up to 25 percent with additional international financial support.[198]

Coal-fired power plants are the country's leading source of carbon emissions. In January 2016, the government announced it would stop building new coal fired power plants and rely on natural gas and renewable energy to power the grid. The decision improves upon plans announced in 2015, where coal was to play an increasingly important role in the country's future energy mix.[199] However, according to Global Coal Tracker, there are some 50 coal power plants in the planning or construction phase in Vietnam.[200]

Vietnam, a Communist country, reported a total of 3,135 state-owned enterprises in 2013. The TPP includes a chapter designed to limit state-owned enterprises and open up sectors to private companies and investors, so the country will likely experience a major restructuring in some industries, including the energy sector.

Agriculture is also among the country's top sources of greenhouse gas emissions, much of this linked to rice cultivation. Vietnam is a major pork producer, and already a big importer of dried distillers grains (animal feed from corn ethanol) from the U.S.[201] With the increased investment of global meat companies in Vietnam, the country will likely expand pork production under TPP.[202] Japanese agribusiness companies are already expanding investments in Vietnam with an eye towards TPP, looking to put into put into operation large-scale farms to capitalize on the country's "abundant natural resources and cheap labour."[203]

NEW APPROACH ON TRADE NEEDED

The national commitments on climate action through the Paris climate agreement are in many ways undermined by conflicting commitments set by the TPP and other free trade agreements. The Paris commitments are voluntary and non-binding – they are considered soft law, as opposed to the hard law of the TPP. Despite the limitations of the Paris agreement, countries have never before made this level of public commitment to address climate change. Countries will have an opportunity to ratchet up their climate commitments in 2018, then again in 2020 and every five years after that. The public nature of the commitments—and ongoing monitoring of those commitments—will hopefully provide some degree of accountability.

With the convergence of the legally enforced TPP and the voluntary national climate commitments—we have an opportunity to consider more directly how trade rules could impact the climate. In this paper we have raised a number of points of conflict between trade and climate policy. At a minimum, improvements and more detailed climate assessments should be completed for future trade agreements, including the Transatlantic Trade and Investment Partnership, prior to any signing. But ultimately, climate goals and commitments should be integrated trade objectives at the beginning—before negotiations even begin.

It is impossible to separate the outcomes of current trade regimes from the ways in which they were negotiated – often in secret, with heavy corporate influence and very little public scrutiny or input. Civil society groups in the U.S. (The Trade Act)[204] and in the EU (Alternative Trade Mandate)[205] have put forward comprehensive proposals for how trade agreements —both past and future—should be assessed and negotiated. Both approaches would be a leap forward in asserting the primacy of climate objectives above strictly trade concerns and the interests of investors.

As the effects of climate change worsen, climate policy will have to become more aggressive, not only in putting a price on carbon but also support for clean energy production, less emitting and more resilient agricultural systems, and further regulating emissions. Policy actions that include sharp increases in costs and market-oriented approaches to pollution can hit poor and rural communities particularly hard. Governments at all levels will need policy flexibility to address these challenges—and not have their hands tied by outdated trade rules.

Further, trade agreements should no longer be considered in isolation, or given legal priority over other global agreements. Trade policy is too influential, and provides too many obstacles for successful governing on issues like climate change, health, food security and natural resource management—issues that the WTO and other free trade agreements are ill-equipped to handle.

As negotiations at the World Trade Organization have stalled, countries have moved quickly to negotiate regional trade agreements like the TPP. This decentralized approach can make global trade harder to manage, and threatens to leave out many of the world's poorest countries. It also creates markets

where more powerful economies, like the U.S., can have greater policy influence.

The UNFCCC also opted for a more decentralized approach, as each country made their own national level pledge to reduce GHG emissions. But it is still an international treaty with global obligations. Climate change requires and demands global cooperation. Getting clarity on the interface between trade rules and climate change will be essential.

The official signing of the Paris climate treaty is an important first step toward a global response to climate change. But no climate deal will work if it is not supported by other policies. A next step must be the rejection of the TPP and any other trade commitments that undermine our ability to address climate change. The TPP and the WTO are outdated trade regimes modeled on 19th century ideas of "big power" treaties and commercial might. The 21st century demands something very different—trade rules that move countries together towards sustainability, starting with the urgent need to curb greenhouse gas emissions and support adaptations to climate change.

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