

TRADE DEALS BOOSTING CLIMATE CHANGE: THE FOOD FACTOR



(Photo: George Steinmetz)

The climate talks in Paris in December this year are viewed as a last chance for the world's governments to commit to binding targets that might halt our march towards catastrophe. But in the countdown to Paris, many of these same governments have signed or are pushing a raft of ambitious trade and investment deals that would pre-empt measures that they could take to deal with climate change (see box 1).

What we know of these deals so far, from the few texts that have leaked out of the secretive negotiations, is that they will lead to more production, more trade and more consumption of fossil fuels – at a time of global consensus on the need for reductions.¹ In particular, the EU-Canada Comprehensive Economic and Trade Agreement (CETA) and the EU-US Transatlantic Trade and Investment Partnership (TTIP) are expected to result in increased EU reliance on fossil fuel imports from North America, as well as a restriction of policy space to promote low carbon economies and renewables. The Trans-Pacific Partnership (TPP), a mega-pact involving 14 countries in Asia and the Americas that was concluded earlier this month, is expected to result in more gas exports from the US to the Pacific Rim countries. The new deals will also extend investor-state dispute settlement provisions which companies are already using through the North American Free Trade Agreement (NAFTA) to reverse moratoriums on fracking and other popular environmental measures implemented by governments.²

Less has been said about how the provisions dealing with food and agriculture in these deals will affect our climate. But the question is vital, because food and farming figure hugely in climate change. From deforestation to fertiliser use, and from factory farms to supermarket shelves, producing, transporting, consuming and

wasting food account for around half of all greenhouse gas emissions (GHGs).³ Since creating new channels for the flow of farm goods and changing regulatory and investment regimes for agribusiness and the food industry are high priorities in the current deals, there will undoubtedly be impacts on climate change – and likely negative ones, unless we do something about it.

We see seven main ways through which the food and agriculture components of today's trade and investment deals will make the climate crisis worse.

Increasing production, trade and consumption of foods that are big emitters of greenhouse gases

Trade deals, on the face of it, are meant to increase trade. This includes trade in food.

The foods that make the biggest contribution to climate change are: red meat (worst: beef, lamb and pork), dairy (worst: butter and cheese, followed by milk and eggs), fish (worst: wild caught or industrially farmed), poultry, palm oil and highly processed foods (worst: those that are airfreighted). Of course, these are sweeping generalisations. There are a lot of studies that try to measure the precise GHG emissions from different foods depending on where and how they are produced.⁴ But roughly, the picture is what we see in graph 1.

In terms of agricultural production, meat and dairy are the biggest contributors to climate change (see box 2). Only 11% of all meat produced is traded internationally,

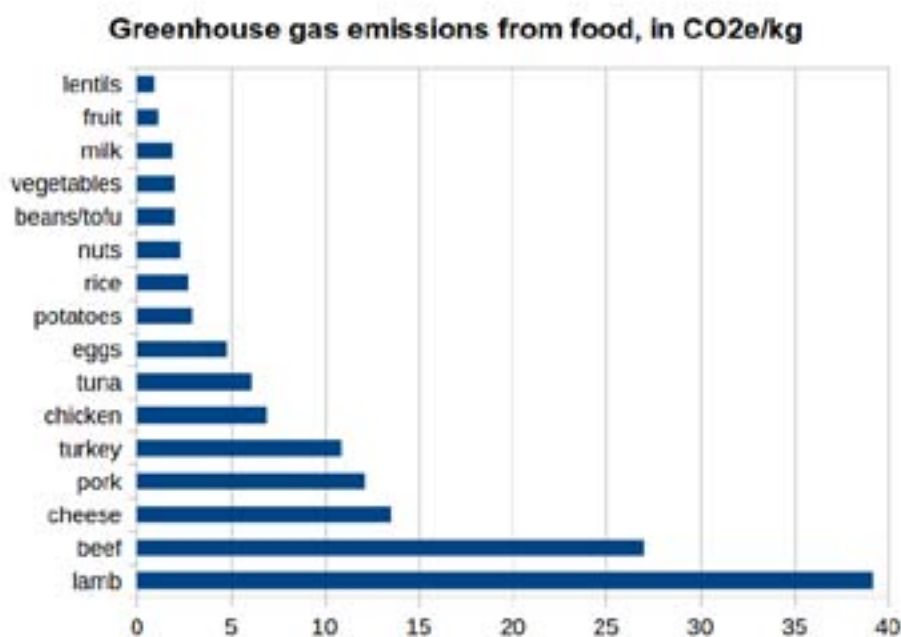
1. See forthcoming reports from Corporate Europe Observatory, <http://corporateeurope.org>, as well as previous reports from Sierra Club, the Friends of the Earth network, CEO and others compiled at <http://www.bilaterals.org/?+-climate-+>

2. Peter Rossman, "Against the Trans-Pacific Partnership," Jacobin, 13 May 2015: <https://www.jacobinmag.com/2015/05/trans-pacific-partnership-obama-fast-track-nafta/>

3. See La Via Campesina and GRAIN, "Food sovereignty: 5 steps to cool the planet and feed its people", 5 December 2014, <https://www.grain.org/e/5102>

4. We are not in a position to assess that data here, but hope to do so soon.

Graph 1



Source: Environmental Working Group, «Meat eater’s guide to climate change and health», 2011

but globally speaking, meat production and consumption are projected to rise by 17% by 2024 and outright double by 2050.⁵ Increased trade is expected to play a role in that growth and some of this will come from the newest trade agreements, which could shift current meat trade dynamics quite a bit.⁶ Of course, we cannot predict how much trade and consumption will grow as a direct result of these deals, but the tariff cuts and lower standards are expected to lead to increased supplies and therefore consumption in importing countries. That, after all, is what the industry lobbies are aiming for.

Take, for example, the TTIP. If it is signed, it is going to expand the European market for US beef, both high- and low-quality. (Quotas for hormone-free beef will go up, while sanitary restrictions are going down.⁷) European quality beef may not be able to compete, leading to a displacement of production to the US. Under CETA, Canada will be sending more pork, beef and dairy to Europe, while the EU will be exporting more cheese to Canada.

The recently concluded China-Australia free trade agreement (ChAFTA) is expected to play an important role in increased dairy production and trade in the

5. See OECD-FAO, *Agricultural Outlook 2015*, 1 July 2015.

6. See the “expanded” meat chapter in OECD-FAO, *op cit*.

7. The allowed tonnage for hormone-free beef might be raised by perhaps 50,000 tonnes per year. This is a hypothetical that analysts are working with, reflecting what the EU offered Canada under CETA. <http://capreform.eu/ttip-and-the-potential-for-us-beef-imports/>

Asia-Pacific region. China imports about 20% of its dairy products and those imports are steadily rising.⁸ Until now, because of the China-New Zealand trade deal, New Zealand dominated China’s foreign dairy supply. Now Australia is expected to take some of that market. At the same time, Chinese companies themselves are investing heavily in offshore dairy production in Australia for export back to China.⁹ They are also expanding their beef production base in New Zealand for export home.¹⁰

China’s surging beef imports, which currently are permitted from just a handful of countries, grew by 18% in the first half of 2015.¹¹ Australia now accounts for nearly

8. Ed Gannon and Simone Smith, *China FTA: Australian dairy to win share from New Zealand*, *Weekly Times*, 26 May 2015, <http://www.weeklytimesnow.com.au/agribusiness/dairy/china-fta-australian-dairy-to-win-share-from-new-zealand/story-fnkegg0i-1227369585925>; “China dairy sector”, CLAL.it, http://www.clal.it/en/?section=stat_cina

9. Chinese investors are not the largest foreign landholders in Australia but are buying or bidding for some of the country’s most significant cattle and dairy farm operations. See farmlandgrab.org.

10. See for example, Naomi Tajitsu and Charlotte Greenfield, *China’s Bright to buy 50 pct stake in NZ meat processor*, *Reuters*, 14 Sep 2015, <http://www.reuters.com/article/2015/09/15/newzealand-silverfern-merger-idUSL4N1L1E820150915>

11. “China’s agricultural imports in disarray”, *Dimsums*, 15 Aug 2015, <http://dimsums.blogspot.fr/2015/08/chinas-agricultural-imports-in-disarray.html>



If TTIP is signed, it is going to expand the European market for US beef (Photo: Mishka Henner)

half of that market because of ChAFTA.¹² Thanks to the China-New Zealand deal, China is the biggest buyer of New Zealand lamb and the second biggest buyer of New Zealand beef.

Dairy trade was a very contentious issue in the TPP negotiations – one that reportedly held up the conclusion of the deal. Now that the deal has been concluded, Washington calls the US farm industry “the big winner” in the TPP, as not only US dairy exports are expected to grow significantly but also US beef and pork.

Tariffs and quotas aside, markets are also expected to grow for certain agribusiness companies and their investors due to the watering down of food safety regulations and labelling laws as a result of these new deals.¹³ This is an important concern for farmers and consumers

in quite a number of countries whose governments are negotiating. Unfortunately, despite statements from political leaders that nothing will change, many of the regulatory changes being pushed for by agribusiness giants involve lowering standards for chemicals, opening markets to cloned meat or genetically modified foods, and dropping disease-related barriers against poultry (avian flu) and beef (mad cow). Under the TPP, we now know that the US government secured the right to challenge other countries’ food safety standards and to set new norms for the presence of genetically modified organisms in foods.¹⁴ This will surely expand the US food industry’s reach, globally.

Promoting industrial farming for export over local farms and food systems

Expansion of markets for European poultry and milk powder has long been a key facet of the EU’s trade

12. “Pengxin may buy two cattle farms in Australia”, China Daily, 2015-8-29, <http://www.ecns.cn/business/2015/08-29/179146.shtml>

13. See GRAIN, “Food safety in the EU-US trade agreement: going outside the box”, 10 Dec 2013, <https://www.grain.org/e/4846> and FoEE, GRAIN, IATP and others, “EU-US trade deal threatens food safety”, 5 Feb 2015, <https://www.grain.org/e/5129>

14. Matthew Weaver, “Vilsack: TPP text available in next 30 days”, Capital Press, 6 October 2015, http://www.capitalpress.com/Nation_World/Nation/20151006/vilsack-tpp-text-available-in-next-30-days

liberalisation agendas, as African farmers and livestock keepers know. They have been mobilising to stop the dumping of highly subsidised chicken and excess dairy from Europe since years. These struggles are now more and more connected to climate change. Industrial poultry, after all, are an important source of greenhouse gas emissions. Broilers, which are raised for their meat, produce seven times more GHG emissions than backyard birds. And layers, which are raised for their eggs, produce four times more.¹⁵

Chicken consumption is rising in many countries because it is a low-cost meat, and therefore global poultry trade is expected to increase. All of this trade comes from industrial poultry farms, which are higher emitting than backyard or small-scale operations. Brazilian and EU poultry farms are relatively highest on the climate-unfriendliness scale, mostly attributed to their reliance on soybeans.¹⁶ Even in China, where exports are just a small fraction of the country's production, trade deals are leading to increased imports of feed materials which serve the factory farms that are built with increased levels of foreign investment.

Beyond poultry, experts now say that over the next ten years, increased global meat consumption will raise overall greenhouse gas emissions *regardless* of improved feed-to-meat conversion ratios in industrial production systems.¹⁷

Boosting global supermarkets and highly processed foods

The biggest names in food retail are aiming for growth in Asia, as well as Africa and Latin America, through several of today's new trade agreements. The expansion of global supermarkets brings with it the expansion of processed food production, trade and consumption. For example, under NAFTA, processed food consumption has skyrocketed in Mexico, bringing with it serious public health problems, and the country's retail sector has been taken over by large global chains.¹⁸

Processed foods - produced by Mondelez, Nestle, Pepsico, Danone, Unilever and the like - are important greenhouse gas emitters, not only because of all the energy used in packaging, processing and transporting

15. Data are from FAO Global Livestock Environmental Assessment (GLEAM) report, "Greenhouse gas emissions from pig and chicken supply chains", 2013, <http://www.fao.org/docrep/018/i3460e/i3460e.pdf>

16. Idem, Figure 36, page 55.

17. Idem.

18. See GRAIN, "Free trade and Mexico's junk food epidemic", 2 March 2015, <https://www.grain.org/e/5170>



Broiler chickens, which are raised for their meat, produce seven times more greenhouse gas emissions than backyard birds. (Photo: Roibu/Alamy)

the foods, but also because of the emissions generated on the farm. Processed foods are constructed out of the cheapest raw materials that companies can source from around the globe. One package of standard supermarket food can contain powdered milk from New Zealand, maize from the US, sugar from Brazil, soybeans from Argentina and palm oil from Indonesia - all foods that are high on the emissions scale.

One recent study of a box of Kellogg's breakfast cereal found that eating a 100 gramme serving generates the equivalent of 264 grammes of CO₂. Add milk to the cereal and the emissions go up by two to four times. The ingredients accounted for about half the total emissions from the cereal, while manufacturing, packaging and transport contributed the rest. The researches identified over 20 countries from which the ingredients were sourced, including maize from Argentina, milk powder from the EU, rice from Egypt and Thailand, wheat from Spain and sugar from the US.¹⁹

19. Harish Kumar Jeswani, Richard Burkinshaw, Adisa Azapagic, "Environmental sustainability issues in the food-energy-water nexus: Breakfast cereals and snacks", Science Direct, April 2015, <http://www.sciencedirect.com/science/article/pii/S2352550915000238>



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The growth of supermarkets and processed foods also means increased deforestation, and other changes in land and water use, to produce more sugar, maize, soybeans and palm oil – four products that form the backbone of the processed food sector. For example, in Nigeria, Wilmar, the largest palm oil trading company in the world, plans to expand its oil palm plantations in Cross River State and this, groups on the ground say, will inevitably mean new deforestation. Through its trade agreements with the Association of Southeast Asia Nations (ASEAN), India has become a major market for Indonesian and Malaysian palm oil, displacing coconut, mustard, groundnut, sesame and other traditional Indian vegetable oils, which were far less damaging to the climate. The same goes for China, the second largest market for ASEAN palm oil after India.

The just-concluded TPP may bring an important upswing in palm oil production, trade and use. “I expect there to be quite a stampede of foreign investment in Southeast Asia when the final text of the agreement is published,” Deborah Elms, executive director of the Asian Trade Centre, told *The Wall Street Journal*.²⁰ Specifically, Malaysia’s palm oil sector is supposed attract a lot of this stampede, as investors jump in to lock down a new cheap source of oil for the US fast food industry.²¹

20. Jake Maxwell Watts, Kathy Chiu and Celine Fernandez, “Company stampede to Southeast Asia seen on Trans-Pacific Partnership trade pact,” *Wall Street Journal*, 7 October 2015, <http://www.wsj.com/articles/company-stampede-to-southeast-asia-seen-on-trade-pact-1444230531>

21. Bernama, “TPP broadens market scope in US, say palm oil experts”, 7 October 2015, <http://www.themalaymailonline.com/money/article/tpp-broadens-market-scope-in-us-say-palm-oil-experts>

Climate cheating: the outsourcing of emissions

One of the effects of trade deals is that manufacturing is being outsourced to low wage countries with few environmental restrictions. The countries where these products are consumed thus appear to have reduced emissions when really those emissions have simply been transferred to the countries where the goods are now produced. As we see in the case of the US and China, neither country then wants to take responsibility. The same happens with foods.

Trade agreements favour food production in countries with low cost and/or heavily subsidised production, with high emissions levels. These countries have powerful industrial agriculture lobbies (US, Brazil, New Zealand, Europe) and are often heavily reliant on agriculture exports for their foreign revenues (US, Brazil, New Zealand, Ireland, Indonesia, New Zealand, Vietnam). It is highly unlikely that these countries will implement any measures to reduce emissions that might impinge on the competitiveness of their agricultural commodities. Already we see these countries moving with their companies to head off international efforts to make significant emissions cuts to agriculture, for instance with the Global Alliance for Climate Smart Agriculture.

The emissions imported with the foods are not likely to be accounted for by the importing country either. Even if an importing government were to try, measures to reduce imports of certain high greenhouse gas emitting commodities could be challenged as unfair trade restrictions under the new deals.



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More biofuels

Biofuels are another form of polluting energy which, along with fossil fuels, may get a boost from the latest trade deals. This is especially when investment chapters of trade deals try to “level the playing field” for foreign investors by establishing rules on “national treatment” and “most favoured nation”, which makes access to land for the production of biofuels much easier. New patenting rules imposed through these deals also make it easier for corporations to engage in technology transfer, knowing that they will enjoy monopoly rights in the signatory countries. Already, EU climate policies have bolstered massive land grabbing in Africa for the production of ethanol for European markets. China, which currently sources ethanol from so-called free trade agreement partners Pakistan and Vietnam, is also investing heavily now in Brazil for this very purpose (a first ever shipment of Brazilian ethanol for China just left South America). The Canadian biofuel industry expects to gain a new C\$50 million market opening in the EU thanks to CETA.²² Many biofuel crops – sugar cane, sugar beet, sweet potato, oil palm,

22. Government of Canada, “CETA: What has been said”, <http://www.international.gc.ca/trade-agreements-accords-commerciaux/agr-acc/ceta-aecg/benefits-avantages/quotes-citations.aspx>

maize, sorghum, oilseed rape – can be interchangeably used in the food industry, too.

If the TTIP agreement between the US and the EU goes through, modellers say that the US will see a big increase in bioethanol and biodiesel production and exports to the EU who, conversely, will see a big rise in its sugar production and exports to the US.²³ The knock-on effects in Brazil, Argentina and China will be important, too.

Despite its poor scorecard in terms of human rights, land rights and carbon emissions, biofuel production is expected to be increasingly promoted as a renewable energy under climate mitigation strategies, and trade and investment deals will be facilitating this.

The promotion of local food economies undermined

“Buy national” or “buy local” programmes as well as country-of-origin labelling regulations, are generally considered discriminatory and trade distorting

23. John Beghin, Jean-Christophe Bureau, and Alexandre Gohin, “The impact of an EU-US Transatlantic Trade and Investment Partnership agreement on biofuel and feedstock markets”, J Working Paper 14-WP 552, November 2014, <http://www.card.iastate.edu/publications/dbs/pdffiles/14wp552.pdf>



We have a great opportunity to positively eliminate a big part of the climate problem through local food systems. (Photo: Greenpeace Philippines)

under so-called free trade doctrine. The World Trade Organisation (WTO) did little to discourage these initiatives, but new fangled bilateral and regional trade deals could go much further. The EU particularly wants to gain much more access, for European companies, to US public markets at all levels (federal, state, local) under TTIP. Food sovereignty advocates and practitioners see this as a potential threat to local food economies that groups have been painstakingly building over the last decades (e.g. food policy council initiatives to support the use of local foods in public services like schools and hospitals).²⁴ Any moves to make “go local” or “use local” illegal in the food sector will automatically result in increased climate destabilisation.²⁵

The same is true of initiatives to support “green” purchasing or programmes to require purchasing from small- and medium-sized enterprises in the name of

24. See Karen Hansen-Kuhn, “Local economies on the table: TTIP procurement update”, IATP, 13 November 2014, <http://www.iatp.org/documents/local-economies-on-the-table>

25. Not all “go local” initiatives in the food sector are better for the climate. But a lot are.

mitigating climate change. Both of these types of effort can be contested by companies as discriminatory. Free trade agreements and investment treaties typically have an investor-state dispute mechanism that allows companies to challenge governments policies like these. Sometimes the challenge results in huge financial compensation for the company on the losing end of such laws. Sometimes it causes governments to change policy to avoid such lawsuits.

Just like in the energy sector, we need to address consumption to address climate change. Increasing production and trade, or just making it greener, will not alleviate the problem. Since governments agree that 15% of all global greenhouse gas emissions come from livestock and that 74% of these come from beef and dairy, we have a great opportunity to positively eliminate a big part of the climate problem through local initiatives. But to do this, we need to defeat the trade deals and ideology that claim that promoting “local” economies is anti-free market and somehow bad for us. (It is only bad for the multinationals!)

Food security measures made illegal

In 2013, governments prodded by corporate interests, mainly coming from the US, tried to make it a WTO rule that public procurement of food stuffs in times of crisis should be considered a form of trade-distorting farm subsidy. Many governments purchase farm products from farmers to stabilise markets, provide guaranteed prices and run stockpiles or distribution systems in the public interest. The ravages cause by climate change – floods, drought, typhoons, etc – in a world of deregulation and corporation concentration make food shocks more common and more threatening. That means these basic food security measures and strong public procurement programme are more and more needed. Ironically, as soon as the Paris climate talks end in December, governments will fly to Nairobi for a WTO ministerial meeting to decide whether such measures will be considered lawful or not under the global trade regime.

Time to stop destabilising the climate!

Food consumption patterns are shifting. The Western diet is spreading, particularly in the global South, bringing with it problems of health but also increasing climate pressure. (Some people say we need diet change, not climate change.) Commodity traders, agribusiness firms, retail chains, private equity groups and other kinds of corporations that finance and run the industrial food system have a keen interest in expanding business in those very markets. Trade agreements are a great tool to do that, but it's not just a North-South affair. Brazilian companies are competing with Thai counterparts for emerging market shares in Africa, Russia or the Middle East. Australia wants a bigger part of the action in China who is doing more business with the US. And so on.

We have to wake up and do the math. If we want to deal with climate change, we have to cut consumption of some foods and that means cutting production and trade as well. Luckily, it is quite do-able. But it does

require a structural scaling back of “Big Food” and “Big Retail” and those who finance them. Instead, small- and medium-sized farms, processing and markets, supported by public procurement and financing, could do the job better. It requires a push, and bringing the different struggles around climate change together with the struggles for food sovereignty and against corporate-driven trade agreements.

What to do?

- Join the growing campaigns against major trade deals like TTIP, TPP, RCEP, TiSA and CETA. See bilaterals.org for links to key groups and more information.
- Start a focused campaign on trade, climate and food, to show how trade deals your government is negotiating will specifically affect greenhouse gas emissions from food and get them stopped
- Raise the issue of food and food trade in local discussions and actions you're involved in to battle climate change. Come to Paris for the mobilisations outside the COP21. There will be a “trade” bloc in the street march, demanding a stop to TTIP and CETA and other newfangled trade deals. And there will be a day of action on 9 December dedicated entirely to food, agriculture and climate change.
- Use your imagination to develop concrete initiatives to reduce (y)our reliance on the industrial food system and shrink demand for their products. Start a boycott action – this is what food industry leaders fear most.
- Get more aware about the climate impact of the foods you eat and initiate, join or strengthen a local food initiative, be it a coop, school programme, an AMAP (Association for the maintenance of peasant agriculture), a CSA (Community-supported agriculture scheme), farmers' market...

Box 1: Key mega deals being negotiated today

CETA: Comprehensive Economic and Trade Agreement between the EU and Canada. The negotiations were completed in 2014, but the text still needs to be ratified. There is talk of still tweaking some of the language on investor protection, given the scale of public outcry about it.

FTAAP: Free Trade Area of Asia and the Pacific, a trade pact that aims to cover all member states of the Asia Pacific Economic Cooperation (APEC). Was originally floated by the US but now is championed by China as a counterweight to the TPP (which excludes China). Negotiations have not yet begun.

TISA: Trade in Service Agreement, a very significant pact being secretly negotiated among 40 countries outside the World Trade Organisation. Aims to set new global standards for trade in services for all future trade deals.

TTIP or **TAFTA:** Transatlantic Trade and Investment Partnership between the EU and the US. Is under negotiation but massively contested by civil society.

TPP or **TPPA:** Trans-Pacific Partnership, recently concluded among 14 countries on both sides of the Pacific (Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, US, Vietnam). Will need to be ratified by national parliaments.

RCEP: Regional Comprehensive Economic Partnership is a trade agreement between the ten member Association of Southeast Asia Nations (Brunei, Burma, Cambodia, Indonesia, Laos PDR, Malaysia, Philippines, Singapore, Thailand, Vietnam) and six neighbours: Australia, China, India, Japan, New Zealand and South Korea. Currently be negotiated behind closed doors.



Box 2: The elephant - er, lamb? - in the room

The meat industry is perhaps the biggest single cause of climate change. The data vary, are debated and may be distorted. For example, there is a tendency in some corners to present super industrialised cattle operations in the US or Western Europe as being more “climate friendly” than sustainable grazing systems in India or Niger. That is because agencies like FAO tend to use a narrow lens of “efficiency” to make the comparison and they don’t factor in the positive climate contributions from sustainable grazing systems in Asia or Africa. Even the IPCC, which produces much of “the science” that people rely on to judge and act on climate change, gets it wrong sometimes. Still, there is no reason to doubt that raising or capturing animals for food is one of the biggest causes of climate change.

Some key facts worth chewing on:

- According to one often cited but highly criticised study by FAO, put out in 2006, livestock are responsible for 18% of all greenhouse gas emissions. Researchers from the World Bank, writing for the Worldwatch Institute in 2009, put it at 51%. In 2013, FAO reduced their figure to 15%. Either way, it’s big - more than all forms of transportation (air, car, ship) combined.
- Two-thirds (65%) of livestock emissions comes from beef (35%) and dairy (30%) production alone, FAO reported in 2013.²⁶ World dairy production is responsible for 4% of all global GHG emissions.
- One quarter of the earth’s land mass is used for grazing and nearly half of all crops that we produce (40%) - which produce GHGs as well - is fed to livestock.
- Livestock contribute to climate change not so much in terms of carbon emissions but in terms of methane (from ruminant digestion systems = 47% of their emissions) and nitrous oxide (from the fertiliser used to produce their feed + animal waste = 24% of livestock emissions). Methane and nitrous oxide are far more dangerous for our climate than carbon dioxide. In fact, recent data from the University of Minnesota, Yale and USDA suggests that the IPCC have been underestimating N2O emissions from industrial crop production - much of this to produce animal feed - by 40%.

Take into account the general thinking that the world’s meat and dairy consumption are projected to double by 2050, and one can see this is a serious and growing problem.

The good news is that we can do something about this, and relatively quickly. Cutting back on meat and dairy production, consumption and trade would be an effective and realistic way to reduce climate chaos. Compared to carbon, methane is a lot easier and a lot faster to “clean up” from the atmosphere. As to nitrous oxide, a contraction and restructuring of the meat industry towards small scale and local systems could do away with a lot of the fertiliser that is currently being used to produce feed.

We don’t have to all go vegan, but if we want to address climate change we have to take some very serious action towards the meat industry on a systemic and international scale. It’s not enough to stop extracting and burning fossil fuels.

(It’s important to note that FAO data on GHG emissions from livestock is produced with input from people from the meat and dairy industry: the International Poultry Council, International Feed Industry Federation, International Meat Secretariat, International Egg Commission and... Danone.)

26. FAO, “Major cuts of greenhouse gas emissions from livestock within reach, Key facts and findings” 26 Sep 2013, <http://www.fao.org/news/story/en/item/197623/icode/>



GRAIN is a small international non-profit organisation that works to support small farmers and social movements in their struggles for community-controlled and biodiversity-based food systems. *Against the grain* is a series of short opinion pieces on recent trends and developments in the issues that GRAIN works on. Each one focuses on a specific and timely topic.

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