The New Merchants of DOUBT

The corporate playbook by Big Meat and Dairy to distract, delay, and derail climate action

FAO Case Study

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FAO Case Study: How the Big Livestock captured the FAO narratives on food system transformation

The UN Food and Agriculture Organisation (FAO)[1] is the world's premier research data source for food security, nutrition, and the farm industry's environmental footprint. It is also a policy coordinating platform. It convened the first world food summit[2] in response to famine in Africa in 1974, and its agricultural statistics and analyses are regularly cited[3] by the IPCC. Governments of 194 nations plus the European Union fund the FAO's regular budget, which came to just over one billion dollars[4] for the 2022-23 biennium. However, the FAO's neutrality in assembling data on greenhouse gas emissions from livestock has been contested.[5]

This case study examines the evidence for FAO bias in favour of the livestock sector through a review of relevant literature by and about the FAO, as well as through interviews with five former and currently serving FAO officials - some of whom chose to remain anonymous because of the sensitivity of the subject - and three other academic experts. Some of these conversations and exchanges took place over more than one session.

Agriculture is responsible for 23%[6] of global greenhouse gas emissions, mostly[7] due to animal farming. Cattle account for around two-thirds[8] of these emissions. They belch out huge amounts of methane and spur the deforestation of vast tracts of land for grazing and feed crops. Manufacturing the fertilisers for these (and other farm inputs) is a carbon intensive process. Livestock manure also releases methane and nitrous oxide emissions, while animal slaughter, processing and packing releases carbon dioxide all the way along the production line. In 2006, the FAO calculated that livestock accounted for 18% of global emissions but its successive studies have diminished that figure, which it currently estimates to be 12%.[9]

The FAO was set up in the aftermath of World War II. Its constitution[10] commits it to the conservation of natural resources but also to ever-improving agricultural production efficiency as a guarantor of food security. In practice, this has been used to[11] *'maximise the positive role [of] livestock'* and advance it as more advantageous[12] than plant-based alternatives for food security and economic growth. This also reflects the priorities of governments that have strong domestic livestock industries, which have tended to see[13] little political upside in taking on powerful agribusiness lobbies that have the power to shake continents, as recently shown in the EU, where all the Green Deal measures on food and farming were derailed.

Thus, UN agri-environmental scientific and policy-making processes have a vulnerability to direct or indirect interventions designed to strategically foreclose challenges to farm business interests. Notably, in March 2023, delegates from Brazil and Argentina over-ruled UN scientists and removed text[14] on negative environmental impacts from meat - and calls for a shift to more plant-based diets - from an IPCC synthesis report.

Within the FAO, lobbying for the livestock sector can be overt, or couched in the language of food security, nutrition and sustainability. FAO member nations all participate in the organisation's committees on agriculture,[15] commodity problems,[16] food security,[17] forestry,[18] fisheries and a commission on plant genetic resources,[19] where they handle both technical and discussion documents. The committee on world food security is the only one of these fora with a democratic mechanism that allows both private sector and civil society participation.[20] Collaborations such as the FAO's formal alliance with Croplife International, a trade association for the pesticides industry, are arranged through the FAO's partnerships office.[21, 22, 23]

While FAO technical documents are mostly uncontroversial data-driven reports, new programmes and policy recommendations addressed for countries to implement unavoidably trigger heated debates involving national delegates. Based on countries' positions, drafting committees will then negotiate thorny issues and thrash out a text which will be sent to the plenary of a given committee for adoption. This is one strategic node at which industry demands may be inserted into FAO processes, according to one former FAO official, who said: "*Sometimes private sector lobbies have members who come [to committees] as part of their country delegations. They don't say that they are working for the country, but they are part of the delegation as advisors, and they influence them like that.*"[24]

Additionally, the FAO's Livestock Environmental Assessment and Performance Partnership (LEAP),[25] provides a forum for expert debate, in which the livestock industry can "*make their feelings known before policies are proposed or adopted*", the former official said. Indeed, the LEAP partnership's first chair[26] - and simultaneously its feed industry steering committee representative - was Frank Mitloehner (see section 1.2.3).[27] Mitloehner has said[28] that his work at LEAP set a compass that it continues to follow for treating livestock as "*an essential part of food and nutrition security*".[29]

FAO points to livestock as a massive problem

Nonetheless, the notion that the world's livestock production model needed to be overhauled began with the FAO, in a report that came out six years before LEAP's formation,[30] and which Mitloehner played a key role[31] in undermining. In 2006, the pioneering study Livestock's Long Shadow[32] estimated, for the first time, that the share of global greenhouse gas emissions adduceable to livestock was 18%, including 9% of all carbon emissions, 37% of methane emissions, and 65% of nitrous oxide emissions. The sector was also found responsible for 68% of total ammonia emissions.

Livestock production was described in the study as *'one of the top two or three most significant contributors to the most serious environmental problems, at every scale from local to global'*.[33] These problems included global heating, land degradation, air and water pollution and biodiversity loss. Livestock's contribution to these was *'on a massive scale and ... the impact is so significant that it needs to be addressed with urgency'*, the report said.[34]

Where food security was concerned, *'livestock actually detract more from total food supply than they provide'*,[35] the report said, because they consumed more human edible protein in the form of feed (77m tonnes) than they produced in the form of food products (58m tonnes). In terms of dietary energy, the relative loss was much higher. Health-wise, the paper linked a large number of ailments, including cardiovascular disease, diabetes and certain types of cancer, to the consumption of animal fats and red meat. Environmental damage could be *'significantly reduced'* by lowering over-consumption of meat in the rich world, it argued.[36] In all, livestock accounted for 20% of earth's total terrestrial animal biomass, used 70% of all agricultural land - and 30% of global ice-free land - but made up just 1.4% of global GDP. Nevertheless, the sector accounted for 40% of agricultural GDP.

Given expectations that world population growth would cause a spike in meat demand by mid-century, the FAO's scientists predicted that livestock's environmental impact would '*worsen dramatically*'[37] without corrective measures. Their report called for a robust and far-reaching programme that included the removal of production subsidies, a pricing of land, water and feed resources to reflect their true scarcity values, and the pricing-in of livestock's externalities under the 'polluter pays' principle.

"*It didn't create a big splash in the beginning,*"[38] Henning Steinfeld, its lead author remembered. "*It was looked at quite positively within the FAO as a solid piece of analysis. It took some time for them to get organised and to understand that the narrative was slipping out of their hands in a way*."

Industry backlash begins

Like an underwater earthquake, the churn from Long Shadow hit the agrifood sector in a series of delayed waves. In 2010, a furore[39] over the paper's PR trappings[40] - specifically, an erroneous FAO communications department claim that livestock emitted more greenhouse gases than the transportation sector - led by Mitloehner, grabbed press coverage,[41] and drew an apology from one of the paper's authors. Several of the Long Shadow's author team would later claim[42] that their subsequent work had been censored, sabotaged and undermined by the FAO hierarchy, in an internal backlash. Some said that they had suffered restricted access to internal resources, meetings, funding and career opportunities. A sense of duress was tangible.

"*Pressure takes many different forms*," Steinfeld said. "*Very often it's not a direct intervention from a member country but someone says something or copies something to someone [in the FAO] and then this becomes an attitude somehow and what we suffered from - what I suffered from - was just a lack of collaboration. You don't get support from the organisation. They're all slow. They all forget. They're not doing things and they're delaying. Your money disappears and so on. This is how the game is played.*"[43]

Two groups dominated the pro-livestock industry narrative in the FAO - the large private sector producers, and the major developed livestock-producing countries, but also African and Asian nations, which see livestock as a mechanism for smallholder growth.

Steinfeld and others say[44] that external pressure was brought to bear on the FAO after 2006, from big meat-producing countries including Argentina, Australia, Brazil, Paraguay, Uruguay and the US, and also from large scale meat and dairy producing companies, who encouraged senior FAO officials not to invest in work studying the environmental impacts of livestock.

"*If you worked in the FAO as a technical officer at the time, you were getting into big games with really, millions of dollars moving because of an argument you'd made, and that is of course - they [the FAO leadership] don't like that - that's not for technical people to play with*," Steinfeld said.[45]

In 2009, a study[46] by the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) - co-sponsored by the FAO and other UN agencies was "*buried*" by the FAO,[47] according to its author, Frank Herren. The paper singled out livestock as a '*major contributor*' to global heating and '*probably the largest sectoral source of water pollution*'.

Australia, Canada and the US reacted by entering '*reservations*' about Herren's conclusions in an annex[48] to his paper. Canada said the study needed more '*balanced and objective analysis*'. The US flagged '*specific and substantive concerns*', noting

that the paper had neglected the '*economic benefits'* for poor countries of opening up their national agricultural markets.

Backstage capture

Behind the scenes, Herren said that these countries exerted "*huge pressure*" on the FAO not to publicise the study.[49] At an FAO plenary at which he had expected to present his paper, he says he was warned by an FAO organiser not to mention the IAASTD report.[50] When the FAO hierarchy tried to censor emissions data in a separate FAO study called 'Livestock in the Balance' in 2009, it provoked Steinfeld and his team to remove their names from the authors list in protest, until the FAO leadership backed down.[51, 52]

One industry-friendly advocacy group, the Livestock Global Alliance[53] (LGA), was set up on the fringes of the LEAP committee to try to thwart the emerging consensus around Livestock's Long Shadow. Its partners included the Bill and Melinda Gates Foundation, the International Livestock Research Institute, the French foreign affairs ministry and the World Bank.[54] Former FAO officials say that LGA meetings discussed obtaining funding for industry-friendly research, which could be funnelled back into the FAO policy-making circuits to influence their output.[55]

"*It is quite normal that if you organise a multi-stakeholder group meeting that certain groups organise themselves and try to push for their agenda,"* Steinfeld said. "*You may be scandalised about it, looking from the outside. But this is the real world, and this is how things happen there*." The LGA was, he said, "*a distracting scheme that was silently aborted around 2018*".[56]

"*The FAO never completely understood that this was a competing model which tried to preserve the interests of those incumbents who were quite upset that there was critical messaging [on livestock emissions] coming out of the FAO*," he continued. The LGA's focus "*was a lot about messaging, communication, media, and trying to bring out convincing narratives that would counteract the so-called 'damage' done by Long Shadow*."[57]

Eventually, the FAO narrative about livestock that coalesced under José Graziano da Silva, its director-general between 2011 and 2019, was one of "*propaganda for smallholders, indigenous people - 'Feed the World!' - without being concrete about anything but just regurgitating the current mantra of the day*," Steinfeld said. Graziano "*was only interested in messaging which was not controversial in any way",* he said, adding that this was the period in which "*pressure on the [FAO livestock research] group started in earnest*".[58]

It included "*moving away key personnel from my group - the secondment of staff to the World Bank and not respecting return arrangements - and competition for funding*", Steinfeld said.[59]

As the pressure continued, two follow-up reports to Livestock's Long Shadow dialled down their descriptions of the scale of the problem and the scope of the measures needed to tackle it. In 2013, Tackling Climate Change Through Livestock[60] estimated livestock's contribution to global heating at 14.5%. Within the paper, the language describing livestock's emissions impact also diminished from a "*massive*" problem to an "*important*" one.[61] The study added significant new data, such as beef and cattle milk accounting for 41% and 20% of sectoral emissions, respectively.[62] But its proposals for reform shifted from cutting subsidies and taxing externalities to encouraging the uptake of more efficient supply chain management and farming technologies. These were more palatable to agribusiness and the FAO's state sponsors. Tackling Climate Change argued that a 30% reduction in livestock greenhouse gas emissions could be achieved with measures already available, such as

better-quality feeds and feed balancing, improved breeding techniques and better animal health.

'*Feeding additives, vaccines and genetic selection methods have a strong potential to reduce emissions but require further development and/or longer time frames to be viable mitigation options*,' the study said.[63] Its conclusion added that livestock mitigation proposals had to be congruent with national development goals and the sectoral vision, so as to '*have traction with policymakers*'.[64]

Pathway to an emissions controversy

At COP28[65] in December 2023, the FAO's third cornerstone paper 'Pathways towards Lower Emissions' report[66] again revised downward its estimate of livestock's contribution to overall greenhouse gas emissions, this time to 12%. The base year for the estimate was 2015 but the paper's findings seemed to contradict other FAO reports. A separate paper[67] in 2018 had observed a 39% rise in global meat production between 2000-2014, with a further 19% increase predicted by 2030. Another FAO study[68] from 2018 said that livestock emissions had risen by 14% in the same period. Both were based on FAOSTAT data.[69]

These studies were not apparently congruent with the Pathways estimate of total livestock emissions over the same period which, it said, fell from 7.1 gigatonnes of CO_2 equivalent emissions in 2013 (based on 2005 data) to 6.2Gt in 2023 (based on 2015 data). The implied reason for the disparity in Pathways was a new GLEAM 3[70] model utilised by the FAO for the first time and based on an 'IPCC Tier 2 approach'. This was '*richer in terms of process granularity [and] enables a richer analysis of mitigation options*', the paper said.[71] Nonetheless, the GLEAM methodology does not cover emissions from retail, household consumption or the waste disposal of livestock products, and does not include all the land use processes covered by the previous FAOSTAT modelling. The Pathways report also utilised different methodology, input data and global warming potential (GWP) values.[72]

The study was substantially more upbeat than its predecessors, describing livestock as '*playing a vital role*' in providing nutrition and community '*resilience*'.[73] Far from posing a massive problem that demands urgent attention, Pathways merely said that '*if not managed properly, livestock systems can have negative impacts on the environment with greenhouse gas emissions generated throughout the production chain*'.[74]

It acquiesced to an agribusiness-centric model for solutions, saying that: '*the most promising interventions in terms of GHG reduction include enhancing the livestock productivity, implementing feed and nutrition practices, and improving animal health and welfare. Other practices such as breeding, changes in consumption of TASF [territorial animal source food], reducing food loss and waste, and rumen manipulation also contribute to… mitigation potentials*'.[75] The paper also recommended adopting circular economy approaches, more feed additives, and greater efficiency. An '*emissions intensity*' metric was introduced to account for the mitigation potential of using different animal breeds, management practices, feed quality and environmental conditions. The report stressed that 'collaborative efforts from all industry stakeholders are critical to successfully mitigate the anticipated increase in sectoral GHG emissions'.[76]

Where Livestock's Long Shadow planted a flag in the soil for an emergency programme to tackle a civilisational crisis, Pathways walked its study back to graze on the more sedate plains of industry-friendly sustainability measures.[77] The results were nothing if not controversial. In the teeth of a scientific consensus that livestock herd numbers must peak by 2025 and fall thereafter to meet the Paris climate agreement goals,[78] Pathways foresaw a 20% increase in demand for animal products by 2050, and a 32% increase in related emissions (from 6.2 Gt to 9.1 Gt). Shifting to

more plant-based diets was not a realistic alternative as it would only cut global greenhouse gas emissions by 2-5%, the paper claimed, citing a 2017 paper[79] whose lead author was Paul Behrens, an associate professor at Leiden University in the Netherlands.

Behrens' paper had analysed the health and environmental outcomes of state-supported nationally recommended diets (NRDs), but it was outdated. Several countries had drastically reduced their recommended meat intake since then - in the case of Spain to as little as, potentially, nothing. Germany now favoured a 75% plant-based diet, while the advisory meat content in diets from China to Denmark all fell. Pathways did not review other, more appropriate papers for making their assessment such as the Eat-Lancet Commission on Healthy Diet,[80] which called for North Americans and Europeans to cut their red meat consumption by 84% and 77% respectively.

Behrens described Pathways as "*a scientifically flawed report that is already being used to delay the very urgent action we need on reducing livestock numbers for both the planet's health and our own. It's one thing to have your research misused in such an upsetting way to misrepresent the science, but it's another that this report will likely serve to delay the very action we need to transition to a more resilient, sustainable, and healthy food system. In that sense, this report has the potential to cause real-world physical harm to people globally*".[81]

The study did at least draw praise from one quarter: industry lobbyists such as Constance Cullman, the president of the Animal Feed Industry Association, who hailed it as "*music to our ears*".[82] Another academic cited by the FAO in Pathways, Matthew Hayek, complained that the paper misused a report[83] that he had co-written, by applying measurements of total agrifood emissions to livestock emissions alone. By doing so, the mitigation potential of livestock herd reductions was underestimated by a factor of between six and 40, he said.[84]

Other errors noted by the academics included: double counting meat emissions until 2050, mixing different baseline years in analyses and channelling data inputs that inappropriately favoured diets that allowed increased global meat consumption.[85] Together, Behrens and Hayek wrote a joint letter[86] demanding that the FAO retract the Pathways report, sparking press stories[87] across Europe. The FAO responded by promising a dialogue with the two academics. As of 15 May, no FAO officials had contacted them, according to Behrens.

Hayek said: "*The FAO is the global authority on food systems and their relationships to the environment. I don't understand why, with all the public trust they have, they would release reports without a methodology that justifies their authority. This is an institution with great power and influence, and it is not using it responsibly. To paraphrase my grandmother's adage: 'If you can't produce something accurate, don't produce anything at all'.*"[88]

The environmental scientist and director of the Project Drawdown[89] non-profit, Jonathan Foley, went further. "*Even small changes in diets could have a huge impact on climate,*" he said. "*It's a first-order effect. Yet, for some bizarre reason, the FAO seems to have deliberately ignored this science in 'Pathways toward Lower Emissions'. Instead, it focused on solutions that mainly nibble at the edges of the problem but preserve the status quo of livestock production. It is hard to see how we can cut emissions from the food system without facing the tremendous impact that animal-rich diets, crop-based biofuels and high levels of food waste have in the system. Yet the FAO seems content to look the other way, ignoring a broad and established scientific consensus.*"

Roadmap to nowhere?

At almost the same time that Pathways was released, the FAO put out another flagship report, the first of three blueprints outlining how agriculture could play its part in preventing global heating above 1.5C and feeding the world. The 'Global Roadmap'[90] contained a '*portfolio of solutions*', split across 10 domains with 120 recommended actions. To succeed, the plan would need annual livestock productivity increases of 1.7% (to meet assumed demand) and sectoral emissions cuts of 3% a year (to meet emissions-cutting goals). This would represent a doubling of the farm industry's current environmental performance.

The roadmap's genesis appears to have begun[91] with a call on the FAO from more than 40 investors with a combined share value of $18 trillion for a sectoral emissions-cutting plan.[92] The Farm Animal Investment Risk & Return (FAIRR) investors intended this plan to '*act in a similar way to the release of a report for the energy sector by the International Energy Agency, which spurred investment into companies, projects and technologies aligned with the plan*', Reuters reported.[93]

"*It's much needed because for the energy sector there are clear roadmaps which really attracted a lot of investors... but for agriculture we don't have such a map*," said the FAO deputy director Zitouni Ould-Dada.

FAIRR was launched by the Jeremy Coller Foundation in 2015. Coller, a British-born entrepreneur, had an estimated net worth of $320m in 2019.[94] He is also the deputy chair of Tel Aviv University[95] and a member of the advisory council of The Elders,[96] which was set up by Nelson Mandela in 2007. Coller's Foundation opposes intensive factory farming and supports investment in areas including cultured meat[97] and alternatives to animal antibiotics.[98] Its membership list[99] includes an impressive array of asset managers and investment firms, some of whom, like BlackRock,[100] ABN-AMRO[101] and Allianz,[102] do not appear to always prioritise global heating concerns.

According to one former FAO official who still has connections at the organisation, the internal reaction to FAIRR's initial proposal was "*not very deep in enthusiasm*." However, "*Torero was always looking for opportunities to be funded and he hired Laborde to do the work. Normally, there is an internal process where different divisions of the FAO provide comments and clear the work, and, if you really do it right, you submit your plan to a governing body's committee to give countries an opportunity to discuss or be informed about new initiatives. In this case, it came out of the blue. Everyone was surprised when it came out at the COP28 because there had not even been an internal process of clearance*."[103]

Another insider broadly confirmed this sequence of events, indicating that the roadmap was seen internally - by those who were given sight of it - as a generic placeholder report, put together quickly without oversight or review from recognised experts in the field, to which substance would be added in forthcoming tomes. The roadmap did set clear milestones - including for a 25% cut in livestock methane emissions by 2030 - but contained no proposals for cuts to livestock production or consumption through reducing meat and dairy - or increasing plant-based - diets. Instead, the vaunted 30-year effort pitched improved productivity through a shopping list of better genetic techniques, veterinary care, intensified production, improved feeding practices, superior animal health and grazing management, restoring degraded pastures, and certification schemes.

Steinfeld saw its assumptions as unrealistic, as livestock productivity growth was notoriously low at around 1% per annum. "*By what miracle would that be doubled*

all of a sudden?" he said. *"It's not clear, nor is it explained how this would happen. It needs massive investment to help to reduce animal [herd] numbers while increasing average productivity."*[104]

He added that a strategic problem with the roadmap was its neglect of new technologies such as precision fermentation and cultured meat. *"It may not be the future you want but conventional agriculture will be ever-more challenged by climate change,"* he said. *"There will be so much pressure on food in the future that we need to look at all possibilities to produce in innovative ways. That's a conversation the FAO has not had. It should have been in the roadmap."*[105]

Scientists including Behrens and Hayek have also criticised the roadmap for not explaining why its particular 120 interventions were chosen - and not quantifying their environmental benefits. They also inveighed against a lack of transparency about the paper's review process and the absence of a list of its authors.[106] The agribusiness-friendly nature of the roadmap's menu was highlighted when the FAO's chief economist Maximo Torero, who had overall responsibility for it, told the Financial Times last December: *"There's a need to produce more [meat and dairy] because there's an enormous amount of countries that are under-consuming those micronutrients and those products,"* he said. Other regions were *"over-consuming and therefore having health issues"*, he further noted. The intensification called for in the report would take place in countries such as the Netherlands and New Zealand, he said.[107] Notably, he did not mention negative environmental impacts from concentrated production of meat and dairy products.

These locations raised eyebrows among experts, as both countries already have high livestock stocking densities with resulting soil damage and air and water pollution. Dutch fields are saturated with Europe's second highest[108] nitrogen pollution rate - three times the EU average[109] - mostly due to ammonia from livestock manure. In New Zealand, nitrogen pollution is so bad that in some areas up to 11,000 litres of water[110] are needed to dilute the pollution caused by the production of a single litre of dairy milk.

Working under Torero, the FAO's Agrifood Economics and Policy Director, David Laborde, was highly involved in producing the roadmap. During an interview in January, he said that Torero's words had been taken *"a bit out of context"* and that a longer version of the report in February would clarify how livestock production could be intensified in the global south and decreased in the north. At the time of writing this report, the longer version of the FAO Roadmap had not yet been published but Laborde was effusive about its nominal message.

"We want people to adopt healthy diets everywhere," he said. *"That means that in some places, meat demand will increase per capita and in other places it will have to decrease and in the full version of the roadmap we say explicitly that in a number of advanced economies, consumption of meat is already above the national dietary guidelines. We want an overall increase in meat products that would be lower than if we did nothing. If we do nothing, it will double. If we move to something more reasonable, it will just increase by 10% but, in any case, we're not seeing a world - even where people adopt a healthy diet - where total meat demand decreases as of today."*[111]

Laborde said that livestock productivity increases should occur in *"the less efficient or less productive systems, that will include the low-income countries in the global south because that's also where the demand will increase"*.

"It's not the fact that if tomorrow we set down production in New Zealand or the Netherlands, it will make the world better off because, actually, we've seen in Europe

some countries that reduced meat production have actually not reduced their meat consumption and so what has happened? They import more meat. And. in some cases, from some countries that have a worse environmental performance."

Laborde did not say which European countries he was referring to, but this line of argumentation has been heard before in industry circles. The European farm union Copa-Cogeca used it in 2015 to claim that introducing methane reduction targets would '*cut production and shift it to non-EU countries which could have lower environmental regimes*'.[112]

So where would the need for herd reductions be greatest? "*In Europe you can see [a] limitation of total numbers*," Laborde replied. "*Potentially [also] in the US, but I really think where we're going to see a reduction of the number of animals in the system - where today there is very low productivity for animals - is actually in parts of Africa where, when productivity increases, we will see less need to have so many animals. Making productivity gains in many places also means intensification. We want that to be sustainable intensification*."

Laborde indicated that the trajectory of the next two FAO roadmaps would lean to an "*outcome-oriented*" approach. "*If industry says we can have methane reductions with technology and it can demonstrate that in five years we have cut methane emissions by 10% with the same number of animals, that is an acceptable pathway*," he said.

Where possible the FAO may try to skirt rather than confront the power of organised meat lobbies - and environmental NGOs. One official close to the FAO roadmap file added: "*It's better to change by being technology neutral. You have to cut emissions without saying how you do it, and without too many rules or regulations*."[113]

Laborde stressed that the roadmap would not follow all the calls for action made in Livestock's Long Shadow. "*You have to be very careful about the taxation narrative as if you tax (meat) tomorrow it will be the poor consumer that will reduce their consumption first, not the high earners*," he said. "*If we tell people to stop eating burgers to save the planet, half the people will say no*." He insisted that he would give countries what they needed in terms of sectoral reform, rather than what they wanted. "*I'm pretty strong at not being pressured by anyone,"* he said. *"I'm driven by evidence*."

A hard shell may be a prerequisite to working in the FAO. Steinfeld noted that the meat and dairy sector had coordinated their messaging ahead of the COP meeting, albeit not necessarily in regard to the Roadmap's release. "*I know that the meat and dairy sectors had done their homework*," he said. "*They organised themselves. They harmonised their language. They had their write-ups and key messages and memos, the associations where the different companies collaborate. They went about this in a professional way*."

Conclusions

Political battles in the FAO are fought over texts in a tug-of-war that veterans say can resemble a horse trade, particularly when seesaws between development and emissions emerge. "*That's the name of the game*," one FAO insider said. "*It's a big tension. If you want a reading lens for how people in the industry try to model the debate, they start by talking about efficiency. They say 'great improved efficiencies are going to save the world' - including their profits - and that seems to be the only mitigation solution they push. They know full well that, with efficiencies, economies of scale are typically [evident] only on the intensive [farming] scale. What they miss is that 10 inefficient cows in Masai may emit a lot [of greenhouse gases] but overall, they don't count for anything [while] the McDonalds' approach of farming 10,000 cows may be very efficient for the farming of each cow but the (overall) emissions are 100 times larger. We do need to become efficient - but you can't model that and use it as a magic 'sustainability' wand to save the world. You have to go way beyond business as usual.*"[114]

There is no hope of meeting the Paris climate agreement's goal of limiting global warming to well below 2°C and pursuing 1.5°C without significantly ratcheting down agricultural emissions, according to peer-reviewed studies.[115] On our current path, most global warming between 2030 and 2100 will come from the consumption of meat and dairy.[116] The FAO's institutional and, by now, almost automatic deference to industry narratives - bolstered by long-standing practices that transport a conveyor belt of sectoral demands to the FAO's upper echelons - may still not definitively commit the organisation to a path ending in climatic breakdown. Equally, though, its adaptation to power dynamics, which are not openly articulated internally or subject to meaningful accountability processes leaves it open to charges of being an accessory after such a fact. Officials and scientists working within the FAO quickly and informally learn which behaviours will be rewarded with promotion and which will be punished. The result appears to have been an effective institutional capture, albeit one that - from the outside - may be more clearly judged from its outcomes than its processes.

Favouring technology and efficiency over taxation and regulation as emissions-cutting pathways may win traction among well-lobbied policymakers but that does not make them more effective climate mitigation strategies. Similarly, the current practice of allowing industry representatives and lobbyists to sit on national delegations to FAO committees effectively places a fox on the board of the FAO's hen house. The FAO should follow the EU's lead in banning such practices.[117]

Civil society groups such as unions and NGOs should be given equal access to FAO policy-making processes, as should independent academic experts. Major FAO reports should include full lists of authors, peer reviewers and methodologies. Internal transparency should also be increased under the aegis of an independent body capable of holding the FAO to account, and pursuing structural reform, if needed.

As Jonathan Foley said of the reported pressure put on FAO officials from lobbyists and the livestock industry: "*If [this is] true, and if this is connected to their strange discounting of diet changes, this is deeply concerning and calls for a careful review of the FAO's work, and oversight*."[118] In the absence of internal reform, such calls are only likely to grow louder.

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