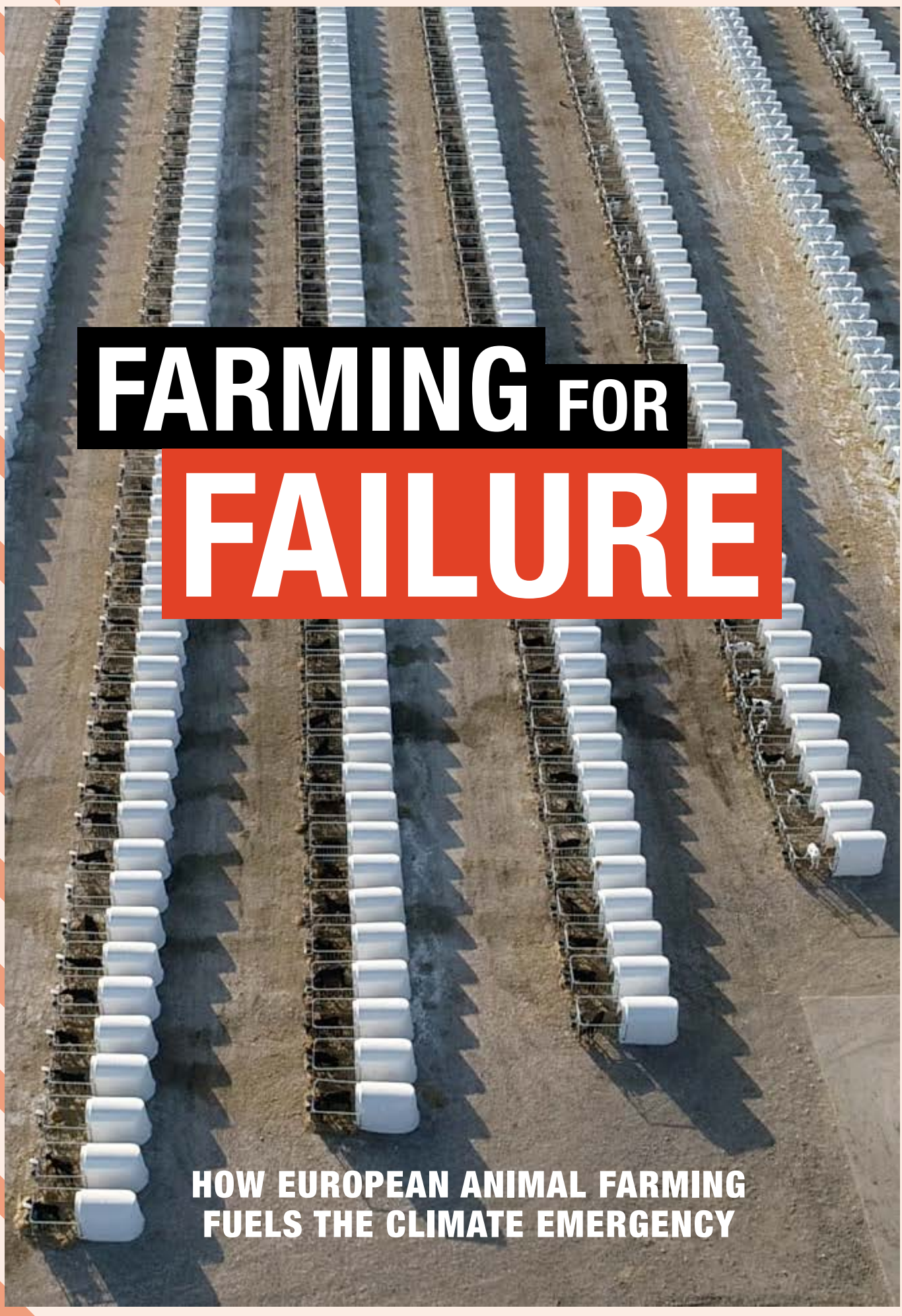

FARMING FOR FAILURE

HOW EUROPEAN ANIMAL FARMING FUELS THE CLIMATE EMERGENCY

GREENPEACE

IMPRINT

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Dairy Factory Farm in Caparroso, Spain
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Contact
pressdesk.eu@greenpeace.org
marco.contiero@greenpeace.org

greenpeace.eu
@GreenpeaceEU

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September 2020

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Sows and Piglets
in Gestation Cages
in Thuringia, Germany

INTRODUCTION

The political response to the climate emergency is one of the defining issues of our time. The European Union has staked its global credibility on decarbonising its economy while leaving no one behind – a central promise of the European Green Deal. But progress in the European Union, and globally, has been painfully slow.

Under the Paris Climate Agreement, governments and the EU committed to limiting global heating as close as possible to 1.5°C above pre-industrial levels to avoid full-blown climate breakdown. In order to achieve this, global greenhouse gas emissions need to halve by 2030, and reach net-zero by 2050. According to scientists,[1] an EU 2030 emissions reduction target of at least 65 % (compared to 1990 levels) would bring the European climate action in line with the objective of the Paris Agreement, followed by reaching net-zero no later than 2040.

Unfortunately, the commitments of European leaders have fallen far short of what science demands. European governments have agreed to reduce EU emissions to net-zero only by 2050. And, for 2030, the European Commission has proposed an insufficient reduction target of 50–55 % (likely to be amended soon to "at least 55 %").[2] Higher climate targets are still being debated by politicians working on the EU Climate Law.

Regardless of whether European climate ambition stays low or rises to match what's scientifically necessary, one fact remains crystal clear: achieving emissions reductions requires radical changes in the agriculture sector, particularly in animal farming.

Globally, according to the Intergovernmental Panel on Climate Change (IPCC), agriculture represents roughly one quarter of total anthropogenic emissions (23 % on average) while the estimated share of food systems more broadly is between 21 % and 37 %.[3] About half of the food system emissions are direct emissions, mostly methane (CH_4) and nitrous oxide (N_2O) from farming practices, from the animals themselves and from their manure. The other half are emissions linked to land use and land-use changes[4] (such as clearing of forests), and CO_2 emissions from pre- and post-production sectors (transport of food, food processing, food waste, etc).

Within agriculture, animal farming is responsible for most of the impact on the climate: 70 % of all direct agriculture emissions globally,[5] including about two thirds of agriculture's methane emissions,[6] not even including emissions from growing feed crops (e.g. use of synthetic fertilisers). In fact, global emissions from animal farming are roughly equivalent to the entire global transport sector (14.5 % of all greenhouse gas emissions).[7]

Applying a full life-cycle approach, it has been estimated that in 2007 European animal farming was responsible for yearly emissions equal to 12–17 % of the EU-27's total greenhouse gas emissions.[8] Even when only considering farm methane and nitrous oxide emissions from animal farming in Europe, the sector was responsible for about 73 % of the region's agriculture emissions (roughly 10 % of total emissions from all sectors).[9] If the true climate footprint of Europe's animal farming sector were included, those numbers would be dramatically higher: the 73 % figure excludes the vast amount of emissions from dedicated animal feed crop production (e.g. synthetic nitrogen fertiliser use), and land-use change like deforestation linked to meat and feed production.

1 UNEP Emissions Gap Report 2019, see: https://www.unenvironment.org/resources/emissions-gap-report-2019

2 See Commission proposal COM/2020/80 in March 2020 for a European Climate Law: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1588581905912&uri=CELEX:52020PC0080

3 IPCC Special Report on Climate Change and Land (SRCCL), Summary for Policy Makers, 8 August 2019. https://www.ipcc.ch/srccl/

4 Between 1960 and 2011, 65 % of global land-use change was driven by the production of animal products. Sourced from Alexander, P., et al. 2015. Drivers for global agricultural land-use change: The nexus of diet, population, yield and bioenergy. Global Environmental Change, 35: 138–147.

5 This figure aggregates enteric fermentation from ruminants, manure left on pastures, manure management and manure applied to soils. It is calculated from the FAO inventory data in Tubiello et al 2013 (Table 2). Tubiello, F. N., M. Salvatore, S. Rossi, A. Ferrara, N. Fitton, and P. Smith, 2013: The FAOSTAT database of greenhouse gas emissions from agriculture. Environ. Res. Lett., 8, 15009, doi:10.1088/1748-9326/8/1/015009 https://iopscience.iop.org/article/10.1088/1748-9326/8/1/015009/pdf

6 IPCC Special Report on Climate Change and Land (SRCCL), Chapter 2. https://www.ipcc.ch/srccl/ Since 2000, animal farming has been responsible for 66 % of methane agriculture emissions.

7 Livestock emissions are estimated at 7.1 Gigatonnes CO_2eqq yearly. Data from: Gerber, P. J., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., ... & Tempio, G. (2013). *Tackling climate change through livestock: a global assessment of emissions and mitigation opportunities*. Food and Agriculture Organization of the United Nations (FAO).

8 Bellarby, J., Tirado, R., Leip, A., Weiss, F., Lesschen, J. P., & Smith, P. (2013). Livestock greenhouse gas emissions and mitigation potential in Europe. *Global Change Biology*, *19*(1), 3–18.

9 73 % calculated from the FAO inventory data in Tubiello et al 2013 (Table 3). Tubiello, F. N., M. Salvatore, S. Rossi, A. Ferrara, N. Fitton, and P. Smith, 2013: The FAOSTAT database of greenhouse gas emissions from agriculture. Environ. Res. Lett., 8, 15009, doi:10.1088/1748- 9326/8/1/015009 https://iopscience.iop.org/article/10.1088/1748-9326/8/1/015009/pdf. The 10 % calculation comes from Lesschen JP, van dBM, Westhoek HJ, Witzke HP, Oenema O (2011) Greenhouse gas emission profiles of European livestock sectors. Animal Feed Science and Technology, 166–167, 16–28. See also Table 6 in Bellarby et al 2013 for the 2007 data on emissions from livestock.

Although agriculture already counts for almost a quarter of greenhouse gas emissions today, if left unchecked, that is projected to increase to a full 52 % of global emissions in the coming decades, with an estimated 70 % of that coming from meat and dairy production.[10] Any efforts to tackle climate breakdown will require radical reductions in greenhouse gas emissions from agriculture and our food system more generally.[11]

And if the urgency of climate action is not enough incentive for policymakers to reconsider industrial animal farming, there are many other reasons to reduce our overproduction of meat and dairy. Industrial production of farm animals and their feed is a key driver of forest destruction and environmental degradation, further intensifying climate breakdown and biodiversity loss.[12] Between 1960 and 2011, 65 % of global land-use change was driven by animal farming,[13] showing how relevant it is to transition away from industrial animal farming to halt global biodiversity decline.[14] Major health issues related to meat- and dairy-heavy diets include cardiovascular diseases, some cancers and Type II diabetes.[15] Industrial animal farming is also clearly linked to the emergence and spread of viral infections similar to COVID-19. The majority of emerging infectious diseases (73 %)[16] originate from animals, and farm animals transmit an extraordinary number of viruses, like coronaviruses and influenza viruses. Researchers also estimate 31 %[17] of outbreaks of emerging diseases are linked to land-use change, of which animal farming is also a major driver.

European policymakers must acknowledge the magnitude of animal farming emissions and commit to immediate and lasting reductions in industrial meat and dairy production and consumption.

This report presents estimations of greenhouse gas emissions from European animal farming. It demonstrates the substantial emissions savings that could be realised through reduced European animal farming production.

10 Bajželj, B., Richards, K. S., Allwood, J. M., Smith, P., Dennis, J. S., Curmi, E., & Gilligan, C. A. (2014). Importance of food-demand management for climate mitigation. *Nature Climate Change*, *4*(10), 924–929. and
Rogelj, J., et al. 2016. Paris Agreement climate proposals need a boost to keep warming well below 2 °C. Nature, 534: 631–639. ***Note: 52 % calculated as:*** *agriculture-related emissions in the baseline scenario of 20.1 $GtCO_2yr^{-1}$ (including land use change) and total emissions for all sectors under a baseline scenario for 2050 (with projected future temperature increase below 3°C) of 38 Gt CO_2yr^{-1}.*

11 Bryngelsson, D., Wirsenius, S., Hedenus, F., & Sonesson, U. (2016). How can the EU climate targets be met? A combined analysis of technological and demand-side changes in food and agriculture. *Food Policy*, *59*, 152–164.

12 Campbell, B. M., Beare, D. J., Bennett, E. M., Hall-Spencer, J. M., Ingram, J. S., Jaramillo, F., Ortiz, R., Ramankutty, N., Sayer, J. A., & Shindell, D. (2017). Agriculture production as a major driver of the Earth system exceeding planetary boundaries. *Ecology and Society*, *22*(4).

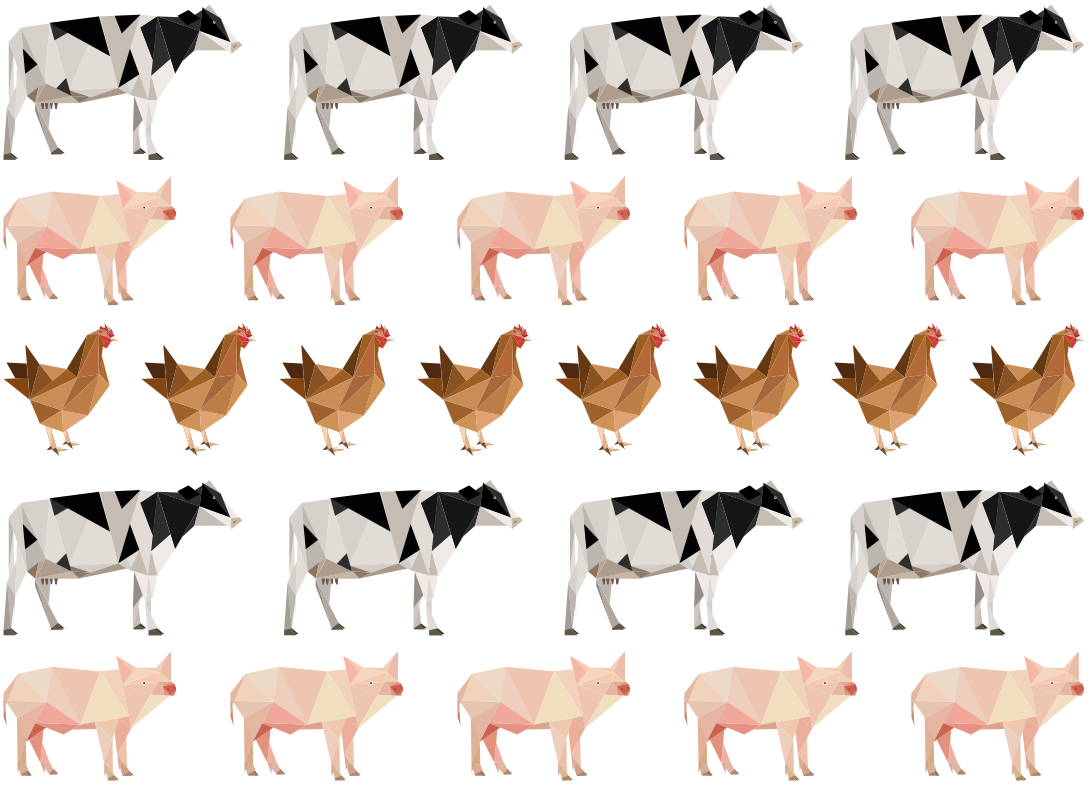
13 Alexander, P., et al. 2015. Drivers for global agricultural land-use change: The nexus of diet, population, yield and bioenergy. Global Environmental Change, 35: 138–147.

14 IPBES (2019): Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Díaz et al (eds.). IPBES secretariat, Bonn, Germany. 56 pages. https://ipbes.net/sites/default/files/inline/files/ipbes_global_assessment_report_summary_for_policymakers.pdf

15 Greenpeace. (2018). *Less Is More: Reducing Meat and Dairy for a Healthier Life and Planet.*

16 Woolhouse, M.E.J. and Gowtage-Sequeria, S. (2005). Host range and emerging and reemerging pathogens. Emerging Infectious Diseases, 11, 1842–1847 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3367654/pdf/05-0997.pdf

17 EcoHealth Alliance (2019). Infectious disease emergence and economics of altered landscapes – IDEEAL, accessed from https://www.ecohealthalliance.org/wp-content/uploads/2019/09/IDEEAL_report_final.pdf



ANIMAL FARMING IN THE EU EMITS

MORE

CO_2

EQ. THAN

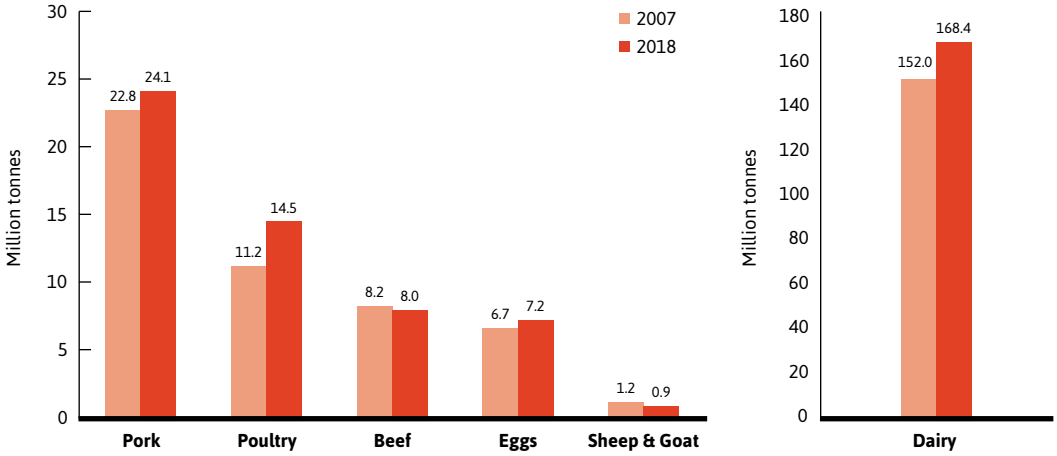
ALL EU CARS AND VANS - COMBINED*

* 704 MT CO2EQ FOR ALL EU28 CARS AND VANS

ESTIMATING EMISSIONS FROM EU ANIMAL FARMING

Production of animal products in European countries tripled between 1960 and 2010, driven by a steady intensification of production per animal in the livestock sector.[18] From 2007 to 2018, this trend toward increasing production and intensification continued, particularly for pigs, poultry and dairy products (Figure 1).

FIGURE 1: ANIMAL AND DAIRY PRODUCTION IN EU-28 2007 AND 2018



Data source: FAO Stat, 2020

The rise in production and intensification has translated into a staggering amount of European land dedicated to feeding animals instead of people. Over 71 % of all agricultural land in the EU is dedicated to feeding livestock. Even without pasture land, and only taking into account land used for growing crops, over 63 % of arable land in the EU is used to produce animal feed instead of food for people.[19]

Using a full life-cycle approach[20] tailored to European production, Weiss and Leip 2012 calculated that animal farming in Europe as of 2004 contributed 623–852 million tonnes of CO_2 equivalent (CO_2eq) per year.[21] Replicating and updating that approach, Bellarby et al. 2013[22] calculated that European animal farming in 2007 was responsible for yearly emissions of 630–863 million tonnes CO_2eq, which corresponds to 12–17 % of the EU-27's total greenhouse gas emissions in 2007. Recent greenhouse gas accounting[23] has confirmed that the emissions factors[24] used in these studies are still reliable for emissions calculations today. This report updates the approach used by these studies, using 2018 FAO production data to show current annual greenhouse gas emissions from animal farming in the EU-28 (Table 1).[25] In the results of this report, direct emissions are defined as those including agriculture sector emissions linked to animal production (methane from enteric fermentation of ruminants and manure and nitrous oxide from nitrogen applied to soils) **plus** energy and industry sector emissions associated to animal production up to the farm gate, and indirect emissions are defined as those associated to land use and land use change linked to animal production up to the farm gate (LULUC).

18 Poux, X., & Aubert, P.-M. (2018). An agroecological Europe in 2050: Multifunctional agriculture for healthy eating. *Findings from the Ten Years For Agroecology (TYFA) Modelling Exercise, Iddri-AScA, Study, 09/18.*

19 Greenpeace, Feeding the Problem:the dangerous intensification of animal farming in Europe, (2019) https://www.greenpeace.org/eu-unit/issues/nature-food/1803/feeding-problem-dangerous-intensification-animal-farming/

20 A "life-cycle" accounting of livestock emissions combines all sources of **direct emissions** (gases released by animal digestion and animal manure) and **indirect emissions** (those related to the production of livestock feed crops, including fertiliser and pesticides used on feed crops, energy and transport, and associated land use changes from feed crop production, such as deforestation) released during the production of a specific product or food.

21 Weiss, F., & Leip, A. (2012). Greenhouse gas emissions from the EU livestock sector: a life cycle assessment carried out with the CAPRI model. *Agriculture, ecosystems & environment*, 149, 124–134.

22 Bellarby et al. 2013.

23 Petrescu, A. M. R., Peters, G. P., Janssens-Maenhout, G., Ciais, P., Tubiello, F.N., Grassi, G., Nabuurs, G.J., Leip, A., Carmona-Garcia, G., Winiwarter, W. and Höglund-Isaksson, L. (2020). European anthropogenic AFOLU greenhouse gas emissions: a review and benchmark data. *Earth System Science Data, 12*(2), 961–1001.

24 Emissions factors express the per-unit amount of GHG emissions produced by 1 unit of a particular item, in this case 1 kg of meat (sheep, goat, beef, poultry), dairy or eggs. These factors can be used to calculate the total emissions from overall production.

25 Calculations concerning EU totals in this report include data for the UK for the following reasons: 1) By including the UK, we allow for clearer comparisons with previous emissions modeling by Weiss and Leip 2012 and Bellarby et al. 2013 which included the UK production. 2) FAO's most recent production data are from 2018, when the UK was still a full EU member. 3) The UK's political exit from the European Union is not yet finalised, and the UK's animal farming and consumption still has important impacts for EU emissions accounting.

Emissions from animal farming have been steadily rising over the past decade. Between 2007 and 2018, direct emissions from animal farming rose by 23.4 Mt CO_2eq, and total emissions, when including land emissions, rose by 39 Mt CO_2eq. FAO production data show a 9.5 % increase in the production of meat, dairy and eggs in the EU-28 in 2018 compared to 2007.[26] Between 2007 and 2018, this increased production generated a 5 % increase in direct livestock emissions, an 8 % increase in indirect livestock emissions, and a 6 % increase in total livestock emissions.[27]

Due to the increases in emissions from animal farming, they now total 501.58 Mt CO_2eq (direct emissions), and 703.69 Mt CO_2eq (direct and indirect emissions, including emissions from land use and land-use change) (Table 1). To put these total annual emissions from European animal farming into context they represent:

- more than the combined total national emissions of four Central European countries influential in EU's climate politics, the Visegrád Group: Poland, Hungary, Czechia and Slovakia (647.5 Mt CO_2eq)[28]
- the combined emissions from Italy, Belgium, Denmark and Romania (710.3 Mt CO_2eq)[29]
- more than the annual emissions from all cars and vans in the EU-28 in 2018 (655.9 Mt CO_2eq)[30]
- more than 18 times the annual emissions of the biggest and most polluting coal power station in Europe, Poland's gigantic Bełchatów power plant (38 Mt CO_2)[31]

Total emissions from animal farming in the EU (703.69 Mt CO_2eq) also correspond to 17 % of total EU 2018 emissions (4226.0 Mt CO_2eq according to the European Environmental Agency (EEA)).[32]

TABLE 1: 2018 EMISSIONS FROM LIVESTOCK PRODUCTION IN EUROPE

Livestock Product	2018 Livestock Production (Million tonnes)	2018 Direct Emissions (Mt CO_2eq)	2018 Total Emissions (Mt CO_2eq)
Total	**222,99**	**501,58**	**703,69**
2007 Comparison	**203,63**	**478,14**	**664,70**
Dairy	168,38	185,22	235,73
Pork	24,08	108,34	180,56
Beef	7,97	145,12	177,01
Poultry	14,49	36,23	71,01
Eggs	7,15	11,44	20,74
Sheep & Goat	0,92	15,23	18,63

Lower (direct) and upper bound (direct+indirect) emissions factors from Bellarby et al. 2013, re: Weiss and Leip 2012. 2018 Livestock production data from FAO. For the purposes of comparison, 2007 emissions totaled here include Croatia, which acceded to the EU in 2013.

26 2007 production data referenced here refer to data presented by Bellarby et al 2013.

27 Figures have been rounded. The raw percentages calculated were 4.90 %, 8.33 %, and 5.87 %, respectively.

28 2018 national emissions from Poland (412.9 million tonnes CO_2eq), Hungary (63.2 million tonnes CO_2eq), Czechia (128.1 million tonnes CO_2eq) and Slovakia (43.3 million tonnes CO_2eq), totalling 647.5 million tonnes CO_2eq. Emissions data from: European Environment Agency. (2020). *Annual European Union greenhouse gas inventory 19 90–2018 and inventory report*, Table ES3. https://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2020.

29 2018 national emissions from Italy: 427.5 million tonnes CO_2eq. Denmark: 48.2 million tonnes CO_2eq. Belgium: 118.5 million tonnes CO_2eq. and Romania: 116.1 million tonnes CO_2eq, totalling 710.3 million tonnes CO_2eq. Emissions data from: European Environment Agency. (2020). *Annual European Union greenhouse gas inventory 1990–2018 and inventory report*, Table ES3.

30 2018 EU-28 emissions from road transport by cars were 542.8 million tonnes of CO_2eq. and by vans (light duty truck) 113.3 million tonnes of CO_2eq. totalling 655.9 million tonnes of CO_2eq. in 2018. Source: EEA GHG data viewer, https://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer, extracted on 01/09/2020.

31 http://www.beyond-coal.eu/database

32 European Environment Agency. (2020). *Annual European Union greenhouse gas inventory 19 90–2018 and inventory report*, Table ES3. https://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2020. Total emissions given (4226.0 Mt CO_2eq) excludes land emissions and removals, when including those, the share of animal farming over net emissions reaches 18 % (total emissions with net emissions and removals is 3970 Mt CO_2eq).

To more easily contemplate the impact of just the *increase* in total annual emissions from animal farming in Europe compared to ten years before (39 Mt CO_2eq), it is equivalent to the climate impact of 8.4 million additional cars on the road,[33] or over 13 million roundtrip flights between Frankfurt and Dubai, or alternatively over 3 million "flights" around the circumference of the Earth.[34] And, even if we only consider the increase in direct annual emissions from animal farming compared to ten years before (23.4 Mt CO_2eq), it is the same as over 5 million additional passenger vehicles on the road,[35] or over 8 million roundtrip flights between Frankfurt and Dubai.[36]

Given the urgency of immediate emissions reductions across all sectors, an emissions *increase* of this magnitude poses a serious threat to EU efforts to achieve its climate commitments. Instead of addressing the problem the EU's common agricultural policy (CAP) only exacerbates it by supporting such a continual increase in animal farming, and associated emissions.

While the overall emissions impact of the animal farming sector in Europe is significant, the contributions of different member states are unequal, with a handful of states responsible for the majority of EU production across all meat and dairy categories. Overall production of meat and dairy foods is currently concentrated among just five nations: France, Germany, UK, Spain and Italy. This relative concentration of production remained constant between 2007 and 2018, while emissions from animal farming increased.

33 39 Mt CO_2eq is equivalent to a year's worth of average emissions from 8,422,611 cars. Source: US EPA Greenhouse Gas Equivalencies Calculator. https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

34 Using a figure of 2900 kg CO_2eq for the GHG impact of a roundtrip flight from Frankfurt-Dubai (Source: Atmosfair https://www.atmosfair.de/en/green_travel/annual_climate_budget), 39 Mt CO_2eq is equivalent to 13,443,348 flights or to 13.2 million flights around the Earth's circumference which measures 40.075 km.

35 23.4 Mt CO_2eq is equivalent to a year's worth of average emissions from 5,064,410 cars. Source: US EPA Greenhouse Gas Equivalencies Calculator. https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

36 Using a figure of 2900 kg CO_2eq for the GHG impact of a roundtrip flight from Frankfurt-Dubai (Source: Atmosfair https://www.atmosfair.de/en/green_travel/annual_climate_budget), 39 Mt CO_2eq is equivalent to 8,083,315 flights.

POTENTIAL EMISSIONS SAVINGS BY REDUCING ANIMAL FARMING

The UN IPCC Special Report on Climate Change and Land published in August 2019 concluded that a global reduction in animal farming and changes in diets could mitigate up to 8,000 Mt CO_2eq per year by 2050, relative to a business-as-usual projection (this potential represents up to 66 % of current agriculture and land use emissions).[37]

Recent EU analysis revealed that, to meet both food security and protect the areas of forest needed to limit global temperature rises to 1.5°C, dietary change and corresponding cuts in animal farming are crucial.[38]

In this section, using our calculations for total 2018 animal farming emissions based on CAPRI emissions factors,[39] we estimate the potential greenhouse gas emissions savings that could be achieved by future reductions in European animal farming relative to 2018 levels.

In Table 2 below, we show the resulting level of European animal farming (in the EU-28) after reducing production volume by either 50 % or 75 % compared to 2018 levels of production. In Table 3, we show the change in animal farming emissions that would result from this decrease, assuming no other changes to intensity of production.

TABLE 2: EU-28 TOTAL LIVESTOCK PRODUCTION REMAINING AFTER REDUCTIONS

Product	2018 EU-28 production volume (Mt, FAO)	After 50 % Reduction (Mt, FAO)	After 75 % Reduction (Mt, FAO)
Dairy	168.38	84.19	42.1
Pork	24.08	12.04	6.02
Poultry	14.49	7.25	3.62
Beef	7.97	3.99	1.99
Eggs	7.15	3.58	1.79
Sheep & Goat	0.92	0.46	0.23

Data source for production: FAO Stat, 2020

37 According to IPCC SRCCL 2019, "Agriculture, Forestry and Other Land Use (AFOLU) activities accounted for around 13 % of CO_2, 44 % of methane (CH_4), and 81 % of nitrous oxide (N_2O) emissions from human activities globally during 2007–2016, representing 23 % (12.0 ± 2.9 $GtCO_2eqq\ yr^{-1}$) of total net anthropogenic emissions of GHGs". Reduction in livestock products and changes in diets could mitigate up to 8 $GtCO_2eqq\ yr^{-1}$ by 2050. Ref: IPCC, 2019: Summary for Policymakers. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.- O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press.

38 Lee, H., Brown, C., Seo, B., Holman, I., Audsley, E., Cojocaru, G., & Rounsevell, M. (2019). Implementing land-based mitigation to achieve the Paris Agreement in Europe requires food system transformation. Environmental Research Letters, 14(10), 104009. doi:10.1088/1748-9326/ab3744
"Maintaining food imports at today's levels to avoid the potential displacement of food production and deforestation required at least a 15 % yield improvement, or a drastic reduction in meat consumption (avg. 57 %). The results suggest that the large-scale afforestation/reforestation planned in European targets is virtually impossible to achieve without transformation of the food system, making it unlikely that Europe will play its required role in global efforts to limit climate change without utilising land beyond its borders."

39 The CAPRI modelling system estimates emissions from the production of 1 kg of meat, milk or eggs, based on a detailed understanding of regional variations in production methods, land type, and animal breeds currently found across the EU-28.

Reducing animal farming by 50 % would provide greenhouse gas savings of 250.8 Mt CO_2eq. Reducing production by 75 % would yield greenhouse gas savings of 376.3 Mt CO_2eq. See Table 3.

TABLE 3: EU-28 EMISSIONS FROM LIVESTOCK PRODUCTION AFTER REDUCTIONS OF 50 %, 75 %

Product	Direct Emissions 2018 (Mt CO_2eq)	After 50 % Reduction (Mt CO_2eq)	Additional Reduction to 75 % (Mt CO_2eq)
Dairy	185.2	92.6	46.3
Beef	145.1	72.6	36.3
Pork	108.3	54.2	27.1
Poultry	36.2	18.1	9.1
Sheep & Goat	15.2	7.6	3.8
Eggs	11.4	5.7	2.9
Total	**501.6**	**250.8**	**125.5**
GHG Saved By Reduction		**250.8**	**376.3**

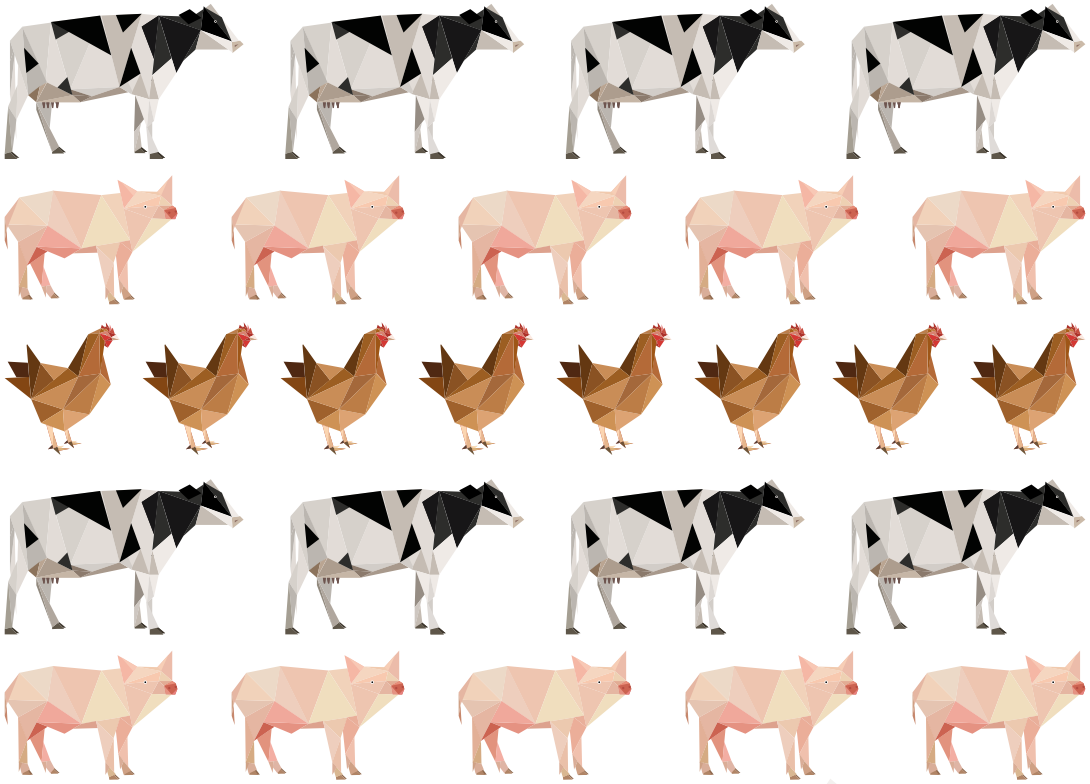
Emissions calculated from lower bound (scenario I for Land Use Change) emissions factors as used by Bellarby et al. 2013, re: Weiss and Leip 2012.

To put these potential direct emissions reductions in perspective, the 250.8 Mt CO_2eq that could be saved by a 50 % reduction in animal farming would avoid the equivalent of the combined annual national emissions, from all sectors, of the Netherlands and Hungary each year, or of the 11 lower-emitting EU countries.[40] Reducing animal farming by 75 % would provide annual direct emissions savings of 376.3 Mt CO_2eq, which is more than the combined yearly national emissions of 13 EU countries,[41] or roughly equivalent to the total climate impact of all industrial processes (e.g. manufacturing, food processing, chemical and mineral processing, iron and metal working, pulp and paper production) across the whole of the EU-28.[42]

40 2018 direct emissions from Netherlands: 188.2 million tonnes CO_2eq. Hungary: 63.2 million tonnes CO_2eq. Combined, the 2018 direct emissions from Malta, Cyprus, Luxembourg, Latvia, Slovenia, Estonia, Lithuania, Croatia, Slovakia, Denmark, and Sweden total 257 million tonnes CO_2eq. All emissions data from: European Environment Agency. (2020). *Annual European Union greenhouse gas inventory 1990–2018 and inventory report*, Table ES3. https://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2020.

41 Combined, the 2018 direct emissions from Ireland, Finland, Sweden, Denmark, Slovakia, Croatia, Estonia, Lithuania, Slovenia, Latvia, Luxembourg, Cyprus and Malta total 375.4 million tonnes CO_2eq. All emissions data from: European Environment Agency. (2020). *Annual European Union greenhouse gas inventory 1990–2018 and inventory report*, Table ES3. https://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2020.

42 According to the 2020 EU Greenhouse Gas Inventory Report, Industrial processes include manufacturing, iron and steel-works, pulp and paper, and processing of foods, chemicals, and minerals (p. 135).



ANIMAL FARMING IN THE EU EMITS MORE

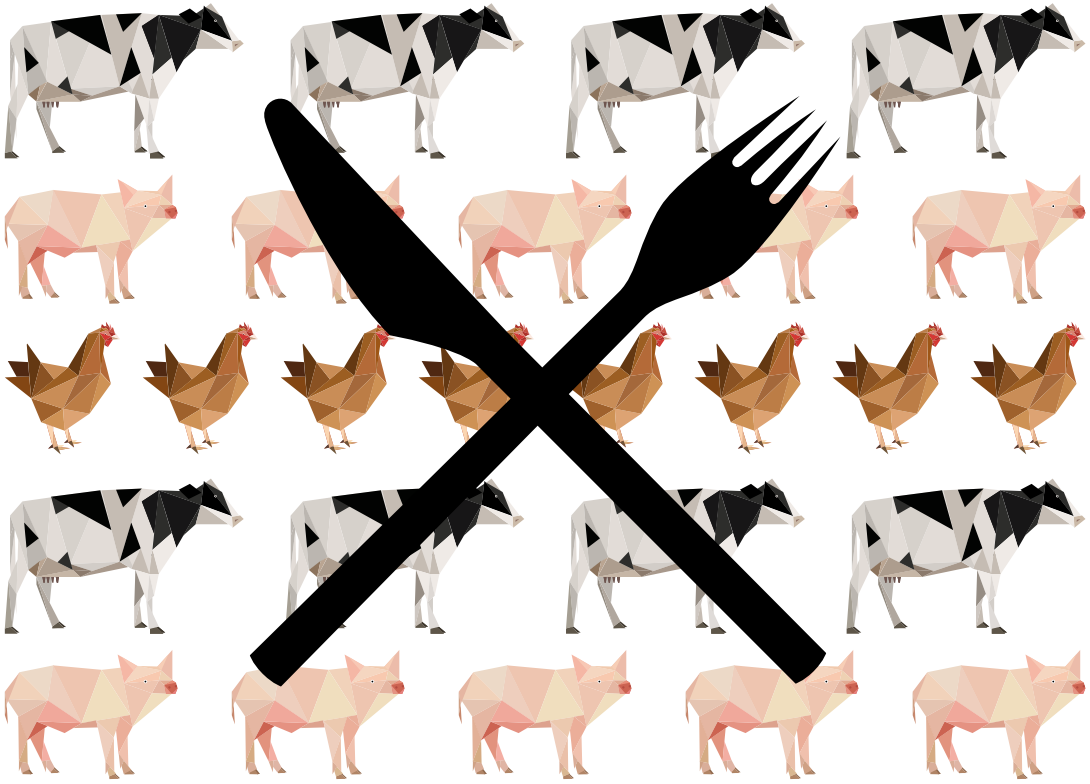
CO_2

EQ. THAN

FOUR

COUNTRIES COMBINED*

*ITALY, BELGIUM, ROMANIA AND DENMARK



THE AVERAGE EUROPEAN EATS

60%

MORE MEAT, EGGS & DAIRY THAN WHAT DIETARY GUIDELINES RECOMMEND*

*FROM WHO AND EFSA

CONCLUSIONS

Cutting meat and dairy is essential to achieve EU climate goals

This report clearly shows that the EU must tackle the overproduction and consumption of animal products in order to achieve the emission reductions needed to avoid climate breakdown. According to the European Environmental Agency (EEA) the EU is currently *not* on track to meet the politically agreed 40 % greenhouse gas emissions reduction target set for 2030,[43] let alone to reach the 55 % target proposed by the Commission or the (at least) 65 % reduction in emissions needed according to scientists.[44]

Despite the scale of emissions from animal farming and animal product consumption in the EU, politicians thus far have failed to address the problem. Animal farming already constitutes roughly two thirds of all the greenhouse gas emissions of the agricultural sector. And what's worse, emissions continue to grow as production and consumption of animal products rise, leading the sector to already emit as much as all the cars and vans driven in the EU. If left unchecked, emissions from agriculture – mostly from animal farming – are projected to increase to half of all global emissions in the coming decades. The ongoing intensification of production per animal has not only failed to deliver emission reductions, but has contributed to the growth in emissions from animal farming.

Now policy-makers have the opportunity to implement **policies that would lead to less and better animal farming, bringing much-needed reductions in greenhouse gas emissions.** Halving the EU's farm animal population would save the equivalent of the annual emissions from all sectors of two whole countries (the Netherlands and Hungary) or of the 11 lower-emitting EU countries (Malta, Cyprus, Luxembourg, Latvia, Slovenia, Estonia, Lithuania, Croatia, Slovakia, Denmark, and Sweden) each year.

A reduction in animal farming needs to go hand in hand with policies to encourage shifts in consumption. Europeans consume meat and dairy at far higher levels than recommended for human health or environmental stability.

Reduced numbers of farmed animals, as well as meat and dairy products consumed, would have benefits beyond tackling climate change. Other pertinent crises of our time are all exacerbated by overproduction and overconsumption of meat and dairy: deforestation and biodiversity loss, environmental pollution in the air and waters, health hazards like cancer, heart disease, obesity, and diabetes, as well as the risk of emerging, infectious animal-borne disease like COVID-19.

For the EU to seize the mitigation potential of the animal farming sector, it urgently needs to fully redesign its food and farming policies with the clear goal of transitioning to ecological and resilient small-scale farming, and healthier plant-based diets. This requires firm political will, especially through the EU's new climate law, the Farm to Fork Strategy and its future common agricultural policy.

43 Förster, H., Dael, S., Gores, S., Nissen, C., Renders, N., Sporer, M., Tomescu, M., & European Environment Agency. (2019). *Trends and projections in Europe 2019: Tracking progress towards Europe's climate and energy targets*. EEA Report No 15/2019. https://op.europa.eu/publication/manifestation_identifier/PUB_THAL19016ENN

44 Climate Action Tracker. (2020). "Country Summary: EU" https://climateactiontracker.org/countries/eu/

POLICY RECOMMENDATIONS

To meet climate goals, the EU and its member state governments need to:

- Increase the EU's 2030 emissions reduction target to at least 65 % (with all sectors contributing), and commit to reaching economy-wide climate neutrality (zero net emissions) by no later than 2040, to go into negative net emissions thereafter;

- End farming subsidies based on hectares, while supporting and encouraging farmers to transition away from further industrialisation of meat, dairy and egg production and instead towards ecological farming;

- Set legally binding maximum livestock density levels – a maximum number of animals a farm can have per hectare – beyond which no farm in the EU could receive farming subsidies;

- Require all sectoral targets and legislation to be made consistent with climate objectives;

- Adopt binding targets to reduce EU's meat and dairy consumption at least 70 % by 2030 and 80 % by 2050 compared to current levels;

- Assess and put forward a comprehensive set of measures to shift consumption to more plant-rich diets, with a transition to ecologically produced animal products, including public promotion, marketing and procurement policies as well as dietary guidelines and fairer pricing schemes;

- Agree on strict rules for the 40 % of common agricultural policy payments that contribute to the 30 % climate spending target under the EU budget and recovery funds.

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"The EU must tackle the overproduction and consumption of animal products in order to achieve the emission reductions needed to avoid climate breakdown."

Dead Piglets in Trash Bins near Vandvaerksgaarden Factory Farm, Denmark

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