

## Note on the methodology for estimating JBS emissions in 2018 and April 2022 publications

October 27, 2022

The Institute for Agriculture and Trade Policy (IATP) estimated JBS' emissions from livestock production for 2016 and 2021 using an emissions calculation methodology developed by the United Nations Food and Agriculture Organization (FAO) called the Global Livestock Environmental Assessment Model (GLEAM) and publicly available corporate data on production volumes. IATP used this methodology to estimate corporate livestock emissions in all three reports published since 2018 as part of our Emissions Impossible series.

JBS does not publicly report its comprehensive annual greenhouse gas emissions (GHG) for Scope 1, 2 and 3, nor does it consistently or comprehensively publish its slaughter figures from year to year. JBS was contacted for clarification on its emissions data prior to both the 2018 and April 2022 publications. The company did not respond in 2018. With regard to our April 2022 publication, JBS responded to our estimates of its 2021 emissions in August 2022, but without disclosing its production figures, clarifying the rate of use of its slaughter capacity (processing capacity utilisation rate) or its full scope emissions.

### 2016 JBS GHG estimates

IATP and GRAIN calculated JBS' 2016 emissions estimates in [Emissions Impossible: How big meat and dairy are heating up the planet](#) report (2018). The methodology for calculating corporate emissions involved a three-step process (see [Appendix](#) Table 1, cited on page 21 and in Figures 4, 5 and 9b):

1. Obtaining the quantity of meat and milk processed in the year 2016 by each company. We used public company reports wherever possible, as well as data generated by industry publications such as WATT (Pig International, Poultry Trends), IFCN Dairy Research Network (formerly known as the International Farm Comparison Network) and Sterling Marketing (personal communication). For beef and poultry, we also determined the quantity of production per geographic region for each company, based on company reports.
2. Using the U.N. FAO's most recent GLEAM data (with the reference year 2010) to determine the GHG emissions per kilo of beef, pork, poultry and milk (emissions factors) for each company. The GLEAM data includes regionalised slaughter weights, carcass dressing percentages and GHG emission intensity values on a per-tonne-of-product basis. For beef, poultry and milk, our calculation of emissions factors included a regional breakdown of production per company, given the available company data on geographic production and the GLEAM model's significant differences in emissions factors between regions.
3. Multiplying the production quantity by the emissions factors to get the totals for each company, the emissions estimates obtained with GLEAM are intended to be approximate indicators of corporate emissions in the absence of standard and transparent emissions calculations and reporting across the industry.

*A complete dataset of our emissions estimations in the 2018 report based on this methodology can be found at: <http://bit.ly/livestock-products-corporate-emissions-B>. This file includes individual datasets for emissions of the top 10 beef, pork and poultry companies respectively and the top 11 dairy companies. It also provides the most recent publicly available GLEAM data and emissions factors used to calculate company emissions at that time.*

For each of the 35 companies in the 2018 report, including JBS, we attempted to obtain several types of information from sources such as companies' sustainability reports, corporate social responsibility reports, or similar documents or filings containing details on GHG emissions and/or emission-reduction targets and plans.

## **2021 JBS GHG estimates**

In our April 2022 [joint brief](#) with DeSmog and Feedback, IATP used the same methodology to calculate JBS' 2021 emissions estimates. DeSmog and IATP consulted various public sources for the quantity of animals JBS slaughters including corporate annual reports, company sustainability reports and industry websites. View our full dataset [here](#). Whereas in 2016, we were able to obtain JBS' slaughter figures (step 1 for emissions calculations above) for beef through the company's filing of its annual report to the U.S. Security and Exchange Commission (SEC) and for pork and poultry through the industry news outlet WATT Global Media, this was not possible for 2021 slaughter figures. This is because JBS (at the time of this writing) has yet to file with the SEC for 2021. In a review of JBS' SEC filing for 2020, we found that JBS did not publish slaughter figures. We also did not find these figures in JBS' 2020 annual report. Instead, we used the daily "per day" figures for beef, pork and poultry slaughter that JBS shared with its investors in [JBS \(2022\) Institutional Presentation including 4Q21 and 2021 Results](#) (p.12 JBS USA Beef, p.13 JBS USA Pork, p. 14 Pilgrim's Pride, p.15 Seara, p.16 JBS Brazil).

We multiplied these daily figures by 354, estimating the number of days that JBS plants around the world on average operate, to arrive at total annual slaughter of beef, pork and poultry. We made this estimate based on discussions with civil society groups engaged on working conditions at slaughterhouses, with reports of seven days per week operations and two to three shifts per day. As in 2016, our calculation of JBS specific emissions factors (step 2 above) included a regional breakdown of production that matched the regional categories used by the GLEAM model.

Since JBS' response, we have continued to do further research on the number of days JBS is in operation. No definitive information is available on the number of days JBS facilities are open per year, and conversations with trade unions and industry experts suggest a large amount of variation between countries and factories (with factories operational between five and seven days per week and holiday closures between six and 11 days per year). Only JBS can clarify the number of days the company slaughters animals and at what rate it uses its daily slaughter capacity.

## **Conclusion**

There exists no independent, central public repository for the meat industry's corporate production, emissions data or climate targets. Many companies simply do not publish much of this information. Some companies publish this information in annual reports, others in corporate sustainability reports, others on webpages and still others in filings with organisations, such as the Carbon Disclosure Project. Those companies that do publish production data and emissions information use various (often non-transparent) methodologies covering different time periods. Thus, it is sometimes difficult to determine what the scale and scope of a company's livestock production is; whether a given company does or does not have an emission-reduction target; if the company is reporting its emissions; and whether those reports are reasonably accurate.

The majority of companies, when we contacted them repeatedly with questions regarding production, emissions and targets, did not reply. This was the case with JBS.

We base our characterisations of corporations' emissions data and targets on extensive research of public websites and analysis of publicly available documents. The fact we must go to these lengths reflects the non-transparent and dysfunctional state of corporate emissions reporting and accountability. This exercise highlights the critical need for governments to enact regulations for mandatory reporting and independent third-party verification. A central public repository, with a common methodology for such data reporting and verification, would be optimal to compare corporations' progress towards climate goals.