WRO
WORLD RENDERERS ORGANIZATION

The Truth About Food Vs. Fuel

What the historical data shows

International Rendering Symposium
Atlanta, 2024

Lucas Cypriano
WRO Technical Director

WRO

About WRO

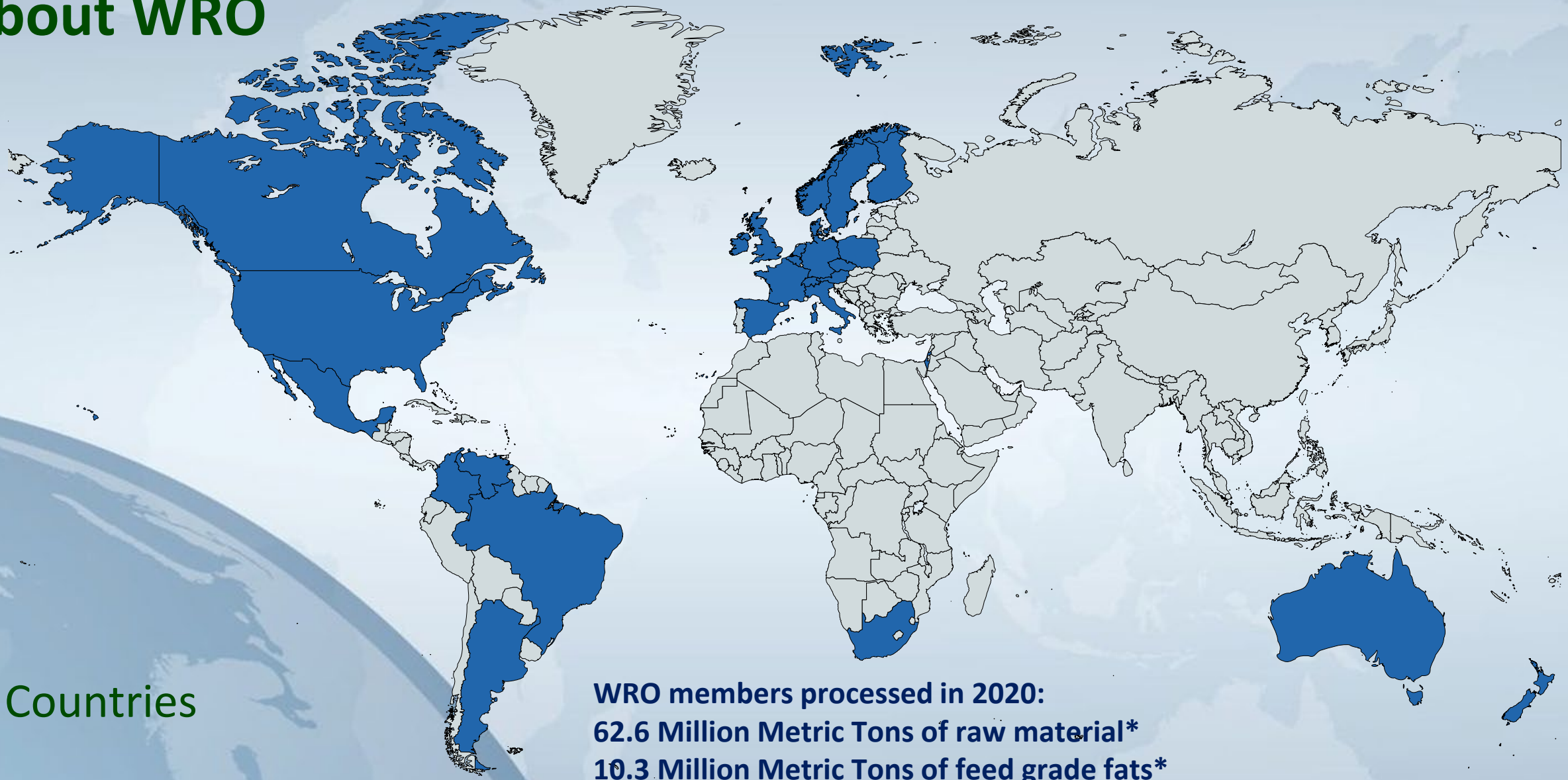
Founded in 1999, due to the BSE crisis in Europe

Represents the international rendering community at international forums with one voice – WOAH, FAO, LEAP, IFIF, GAPFA

WRO members are the national renderers associations or local renderers

The strategies of WRO are decided at the Annual Assembly, and the Officers are responsible to make the strategies operational

About WRO



22 Countries

WRO members processed in 2020:
62.6 Million Metric Tons of raw material*
10.3 Million Metric Tons of feed grade fats*
11.7 Million Metric Tons of feed grade meals*

**WRO estimative according to member's reports*

RENDERED FATS

Production and demand

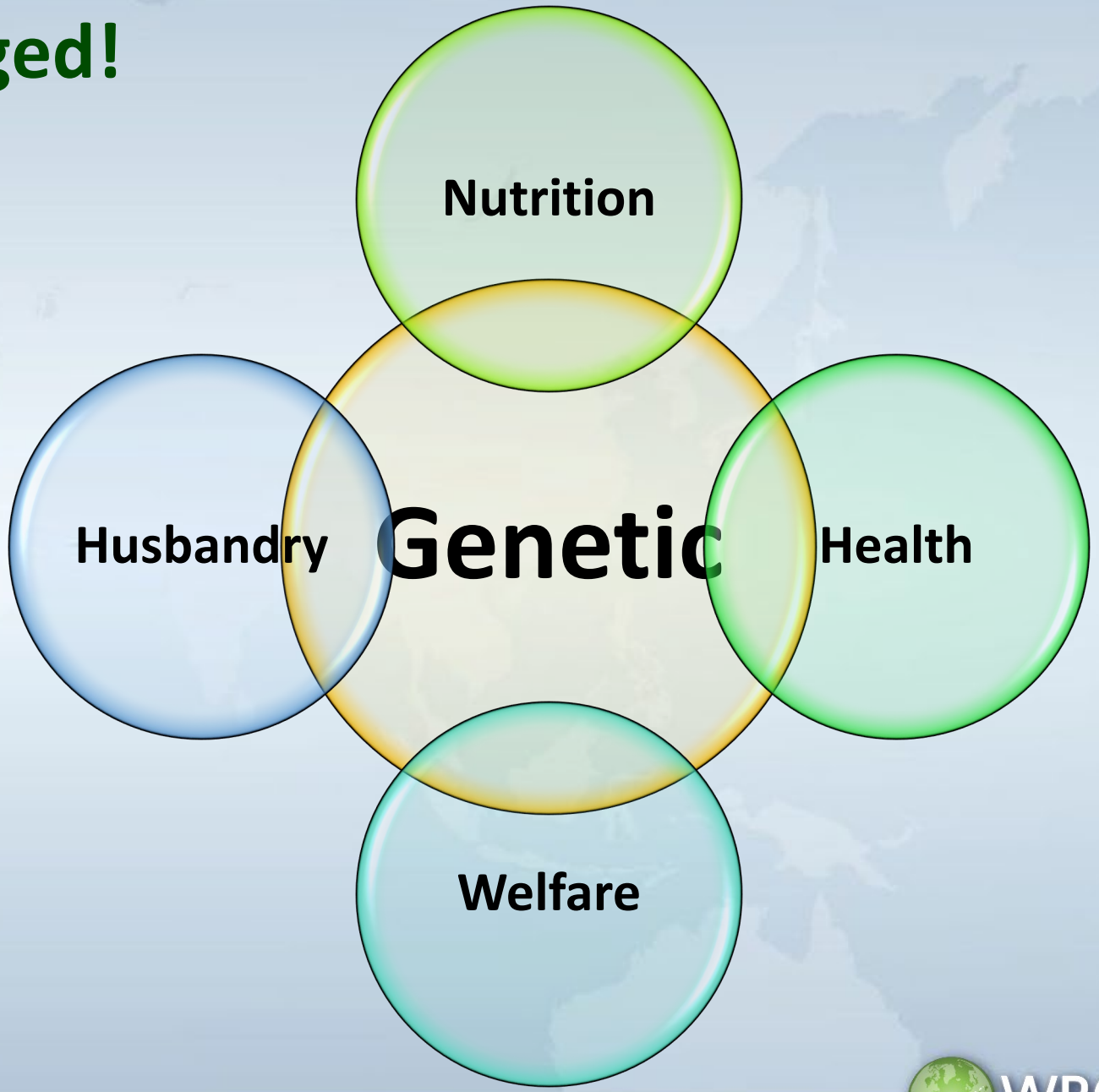
WRO
WORLD RENDERERS ORGANIZATION

Livestock production changed!

The objectives of meat livestock production are:

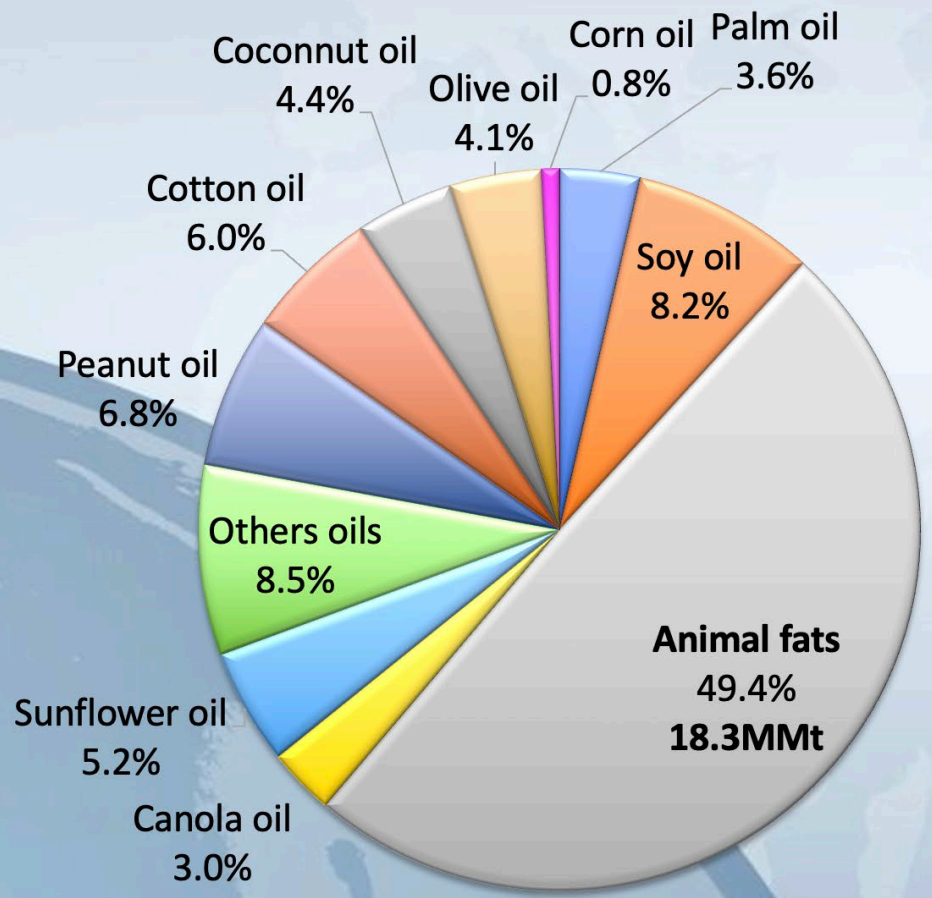
- Muscle (meat)
- Good feed conversion
- High carcass yield, lower production of by-products
- Low fat and protein content in by-products

Livestock production changed!

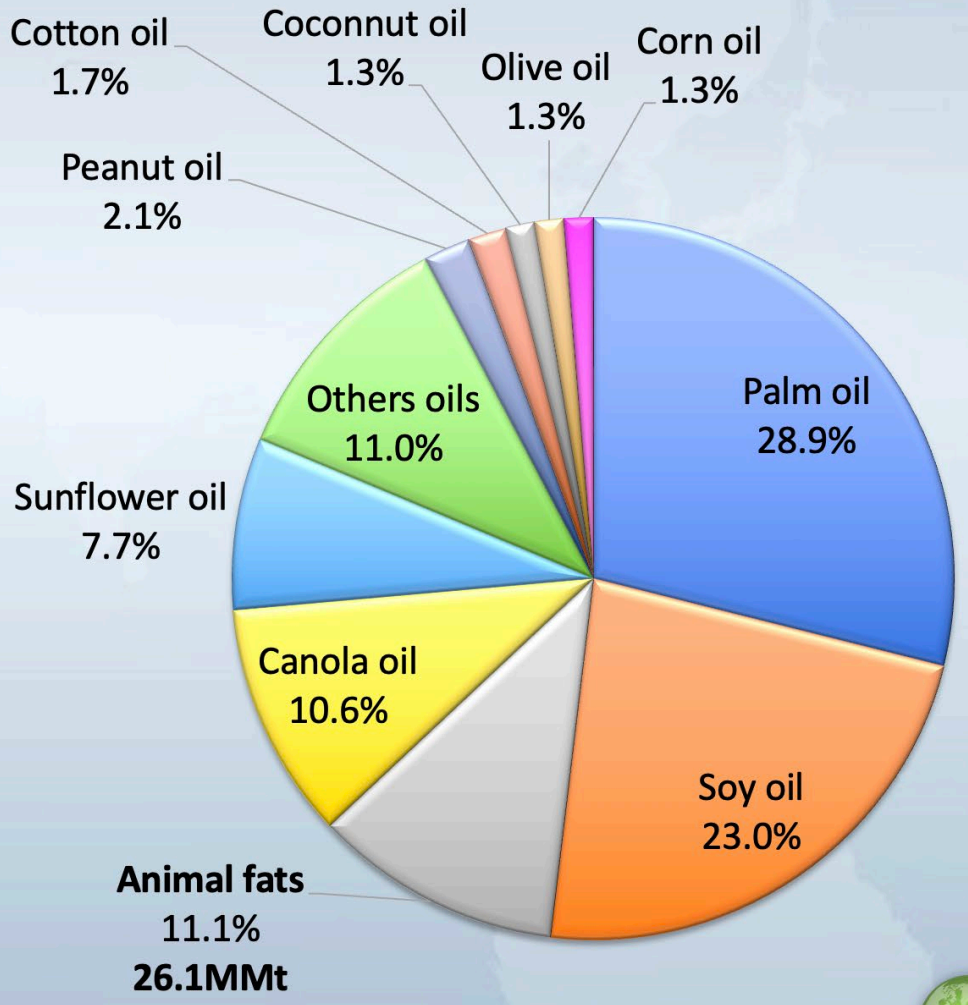


Production share of vegetable oil / animal fat

1961 – 37 MM ton



2019 – 235 MM ton



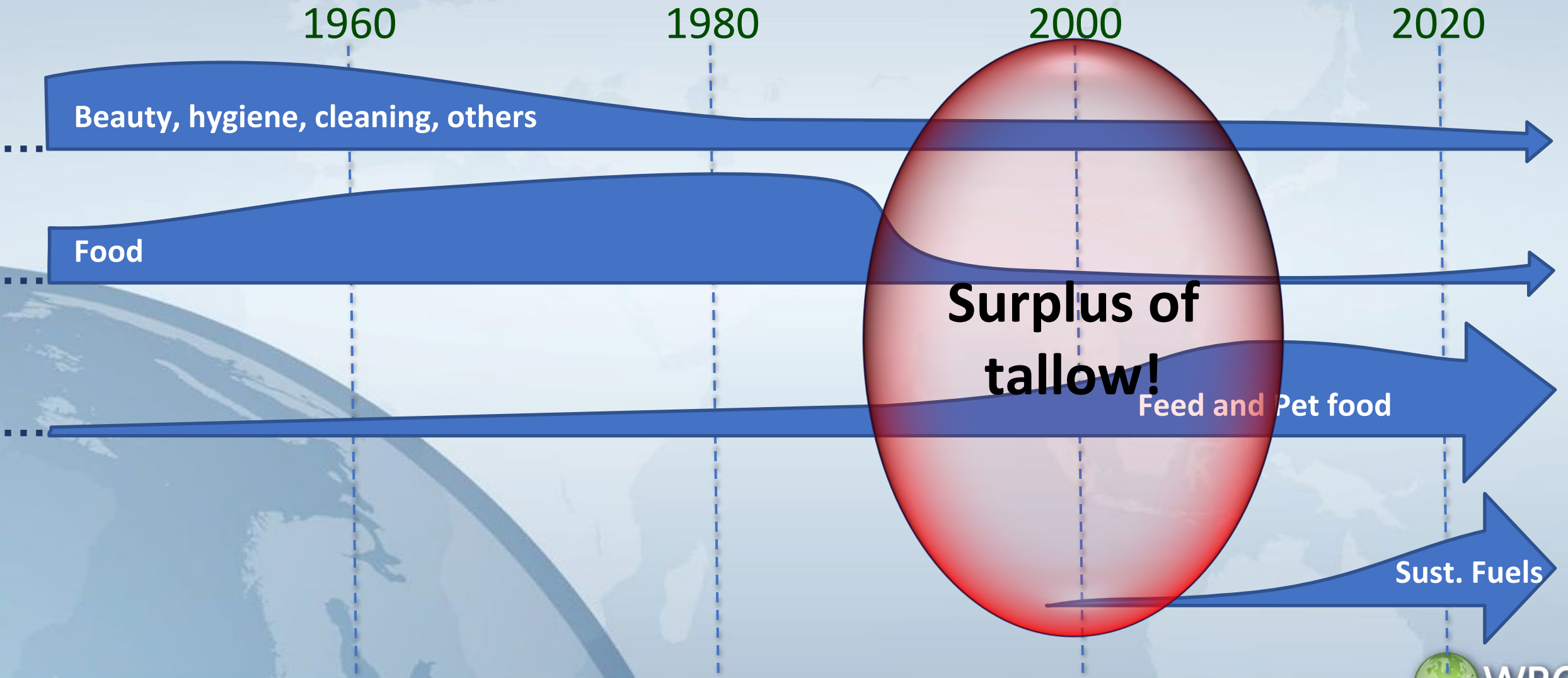
E. Dubinski, El futuro de las grasas y aceites, A&G Magazine, Vol. 4, pp 568-582, 2020

WRO
WORLD RENDERERS ORGANIZATION

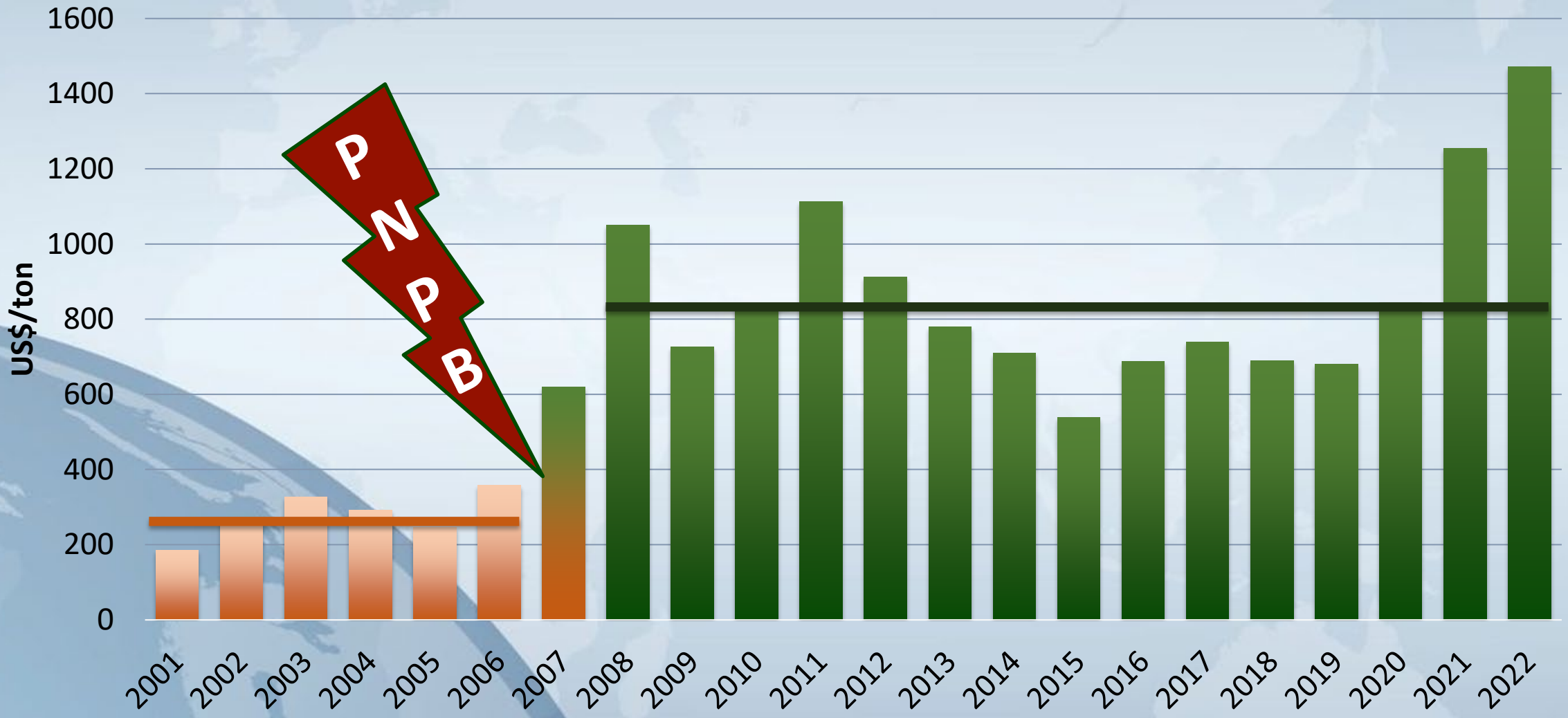
FATS

Prices & Perspectives

Animal fats markets



Beef tallow price – Brazil



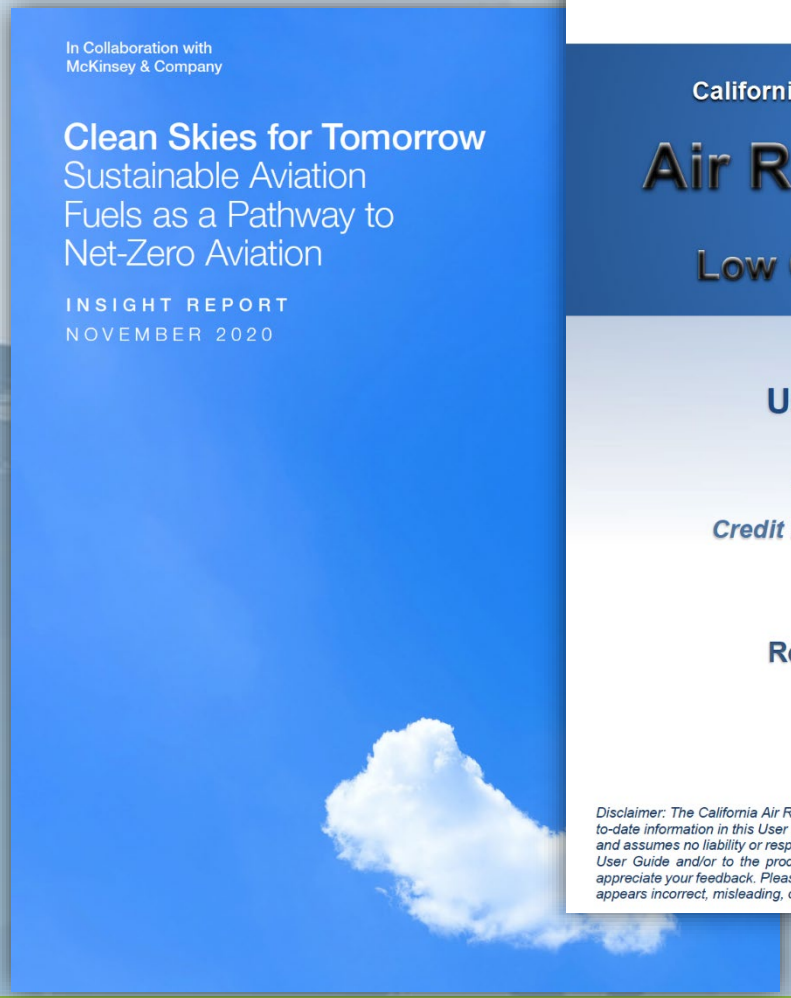
Source: Adaptation ABRA from Aboissa (Year PTAX)

UN SUSTAINABLE DEVELOPMENT GOALS

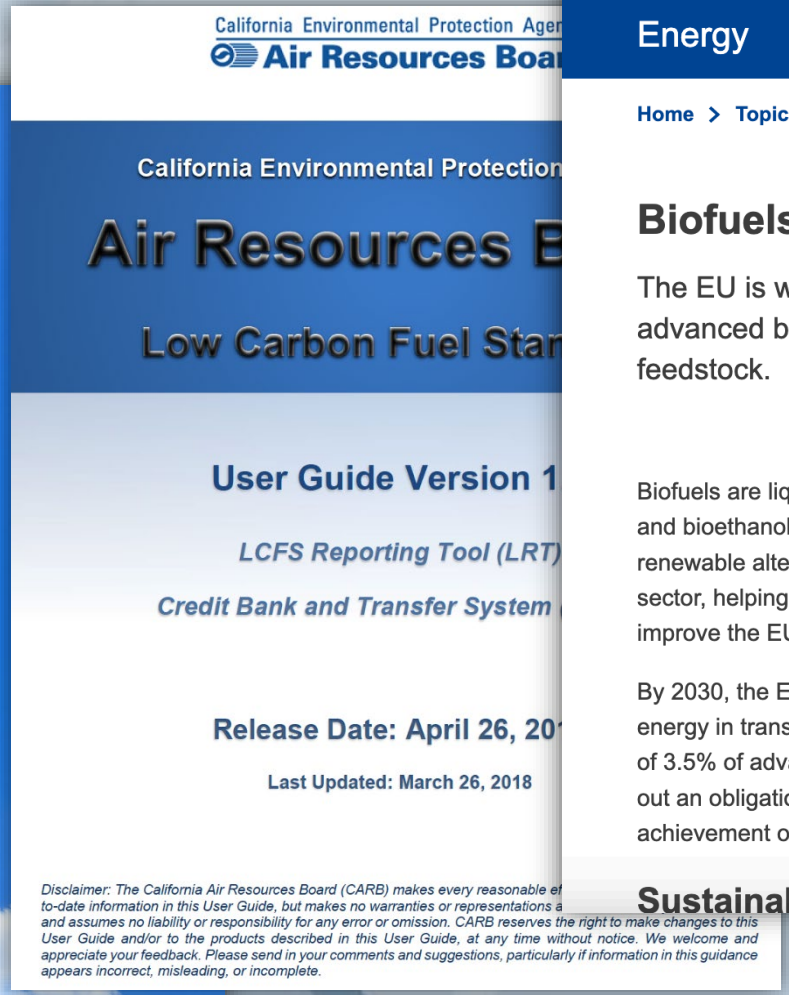
7. Affordable and Clean Energy

- Historically, tallow has been the cheapest source of fat.
- Biofuel industries (biodiesel, renewable diesel, and SAF) use rendered animal fats.
  - No competition with human food.
  - Reduces the demand for arable land for the production of oilseed crops.
  - **Able to use low-grade fats** (high free fatty acids, peroxidised, low iodine index).
- Low CO_2 footprint.
- Electricity production (use of animal fats directly as fuel).

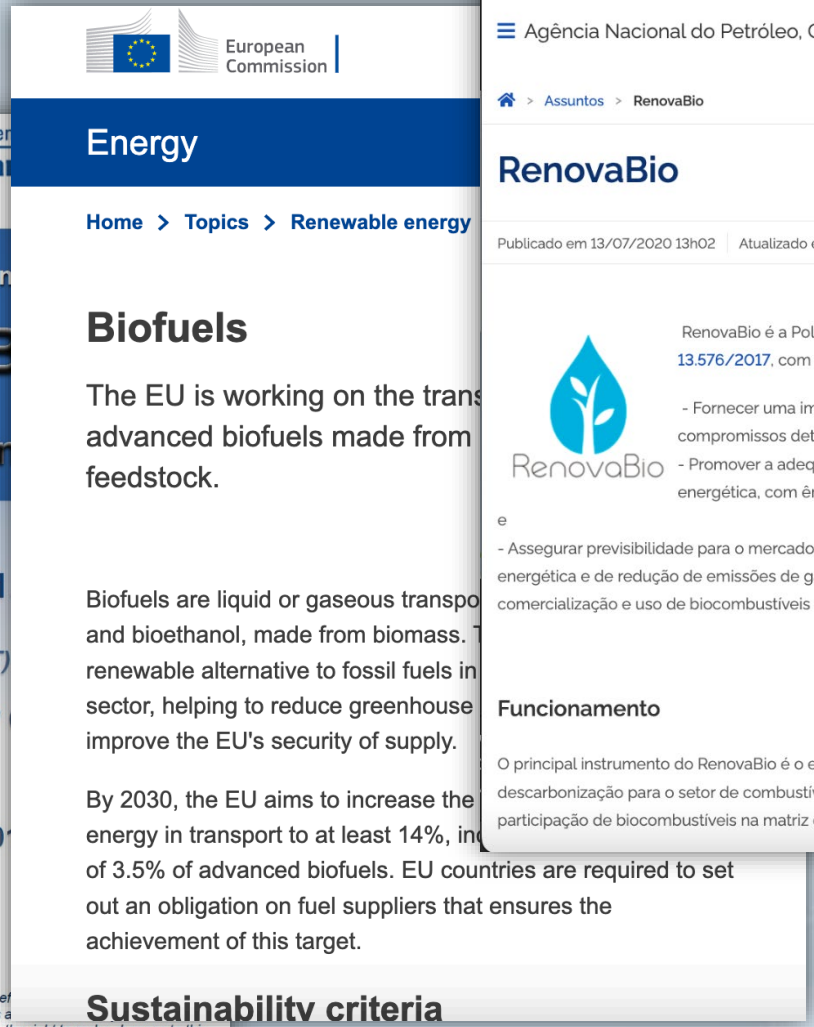
7. Affordable and Clean Energy



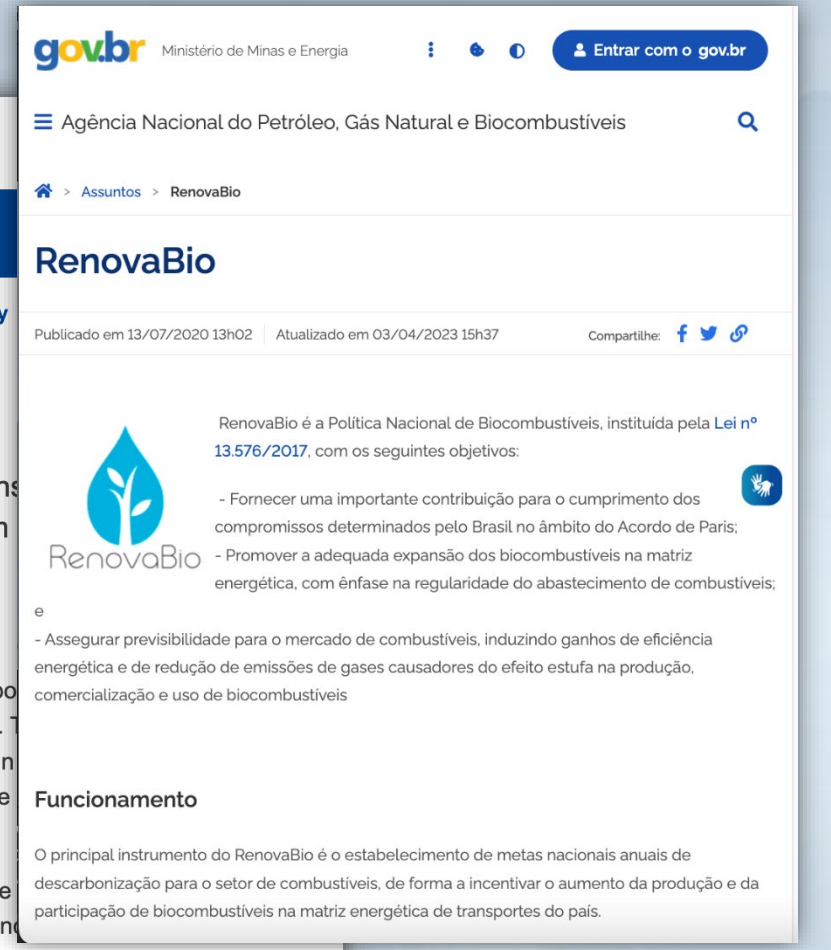
https://www3.weforum.org/docs/WEF_Clean_Skies_Tomorrow_SAF_Analytics_2020.pdf



https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/reportingtool/userguide_lrt_cbts_v1.2_032618.pdf



https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/biofuels_en



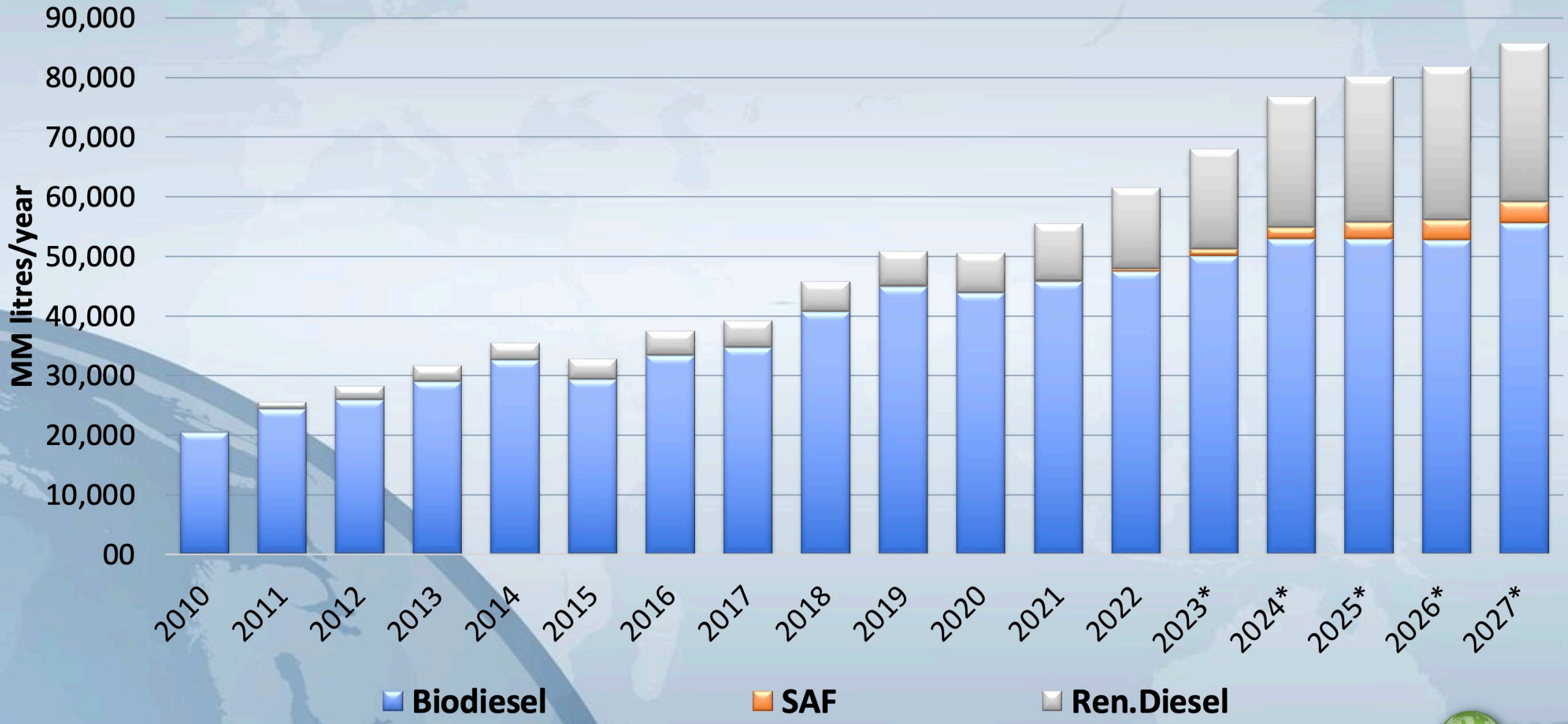
https://www.gov.br/anp/pt-br/assuntos/renovabio

WRO

Biofuels

Biodiesel, Renewable diesel, Sustainable Aviation Fuel (BD/RD/SAF)

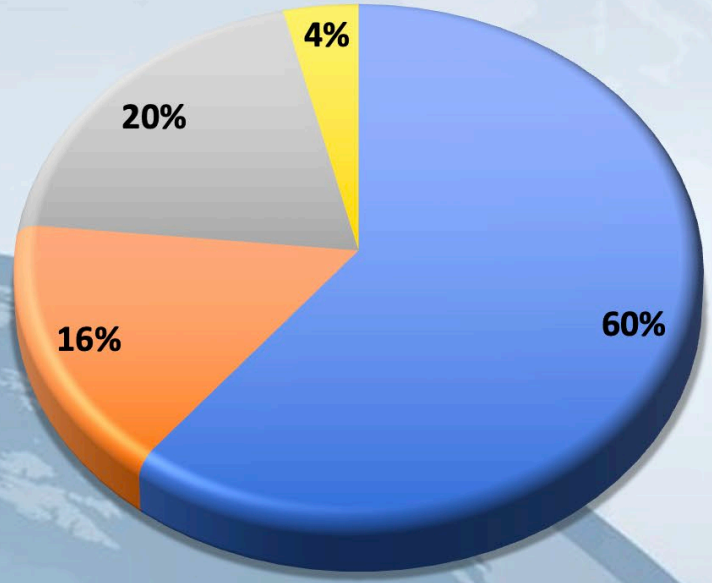
Global production of (BD/RD/SAF)



Source: Adaptation WRO from https://www.iea.org/reports/renewables-2022/transport-biofuels#abstract – Forecasting: from 2023 to 2027

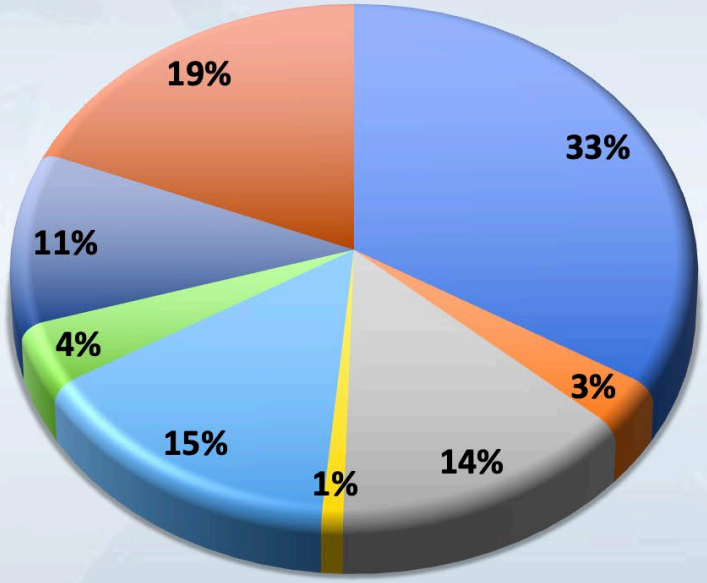
Animal fat production: Brazil, USA, and EU

USA (4.7MM ton)



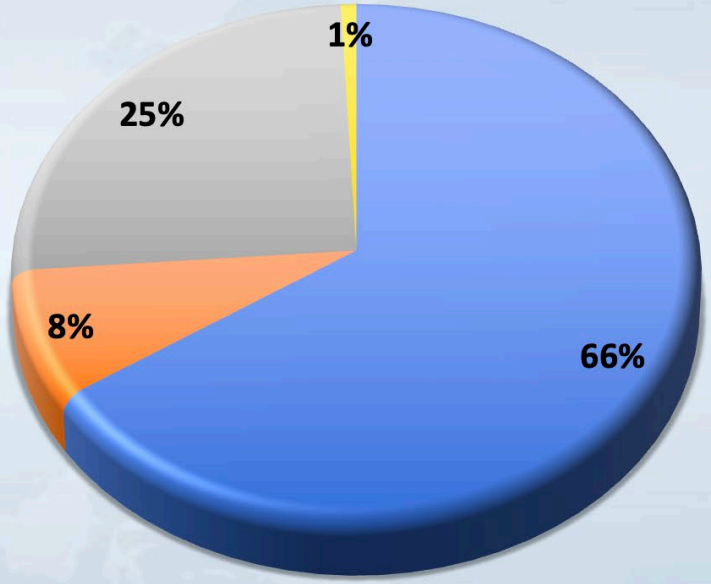
Tallow | White Grease | Poultry fat | Other

EU (2.9MM ton)



Multi Species | Bone fats | Poultry fats | Pig skin fats | Pig fats | Tallow | Lard | Cat 1&2

Brazil (2.0MM ton)

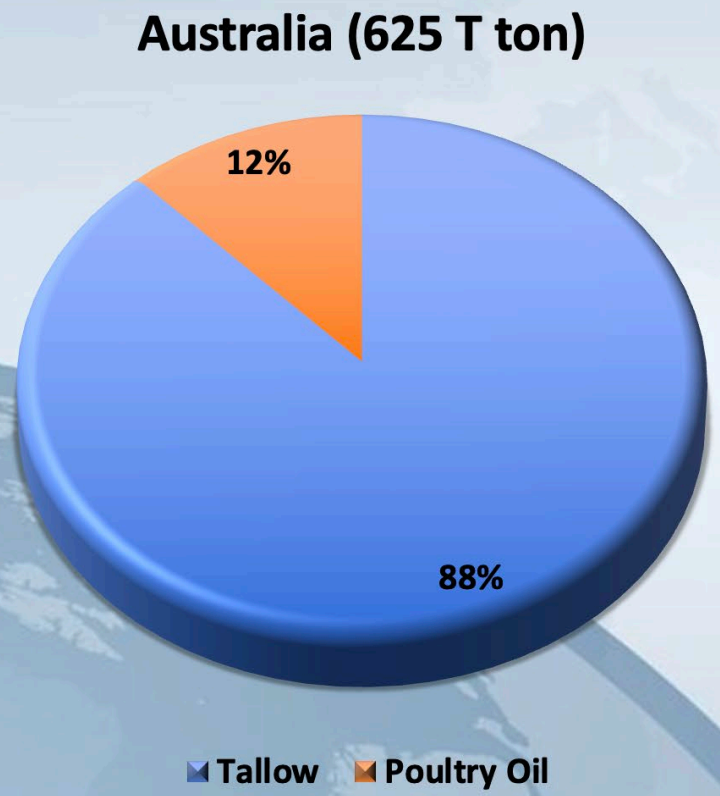


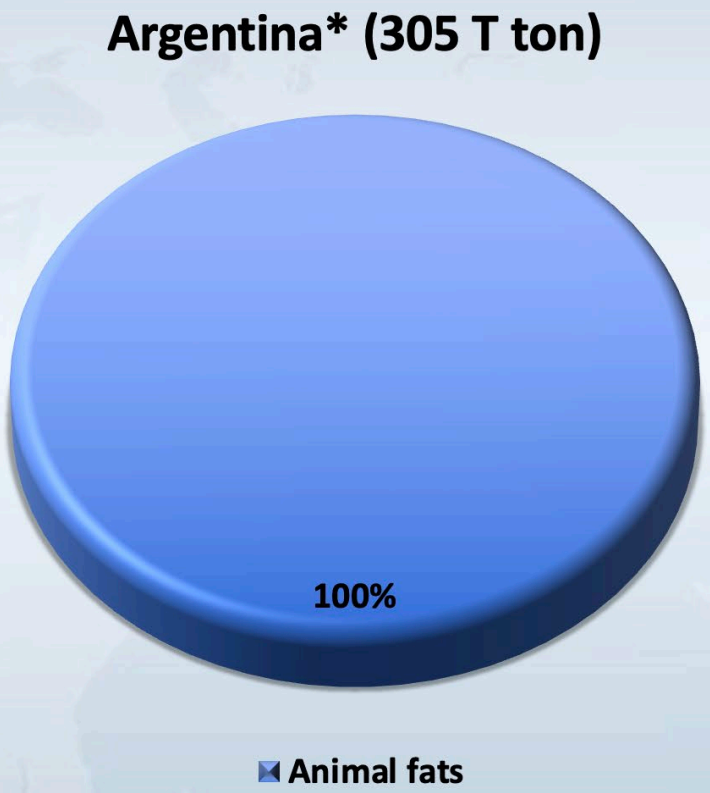
Tallow | White grease | Poultry fat | Fish oil

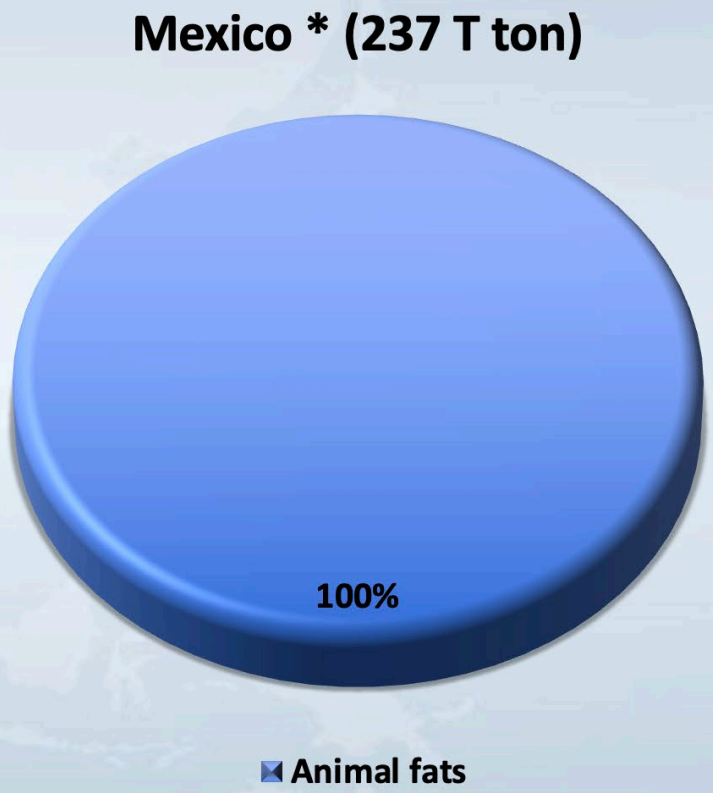
Sources: USA – Dana Johnson Dowining, Render Magazine, 2023; EU – Dirk Dobbelaere, EFPRA 2023; Brazil – Anuário ABRA 2022

WRO
WORLD RENDERERS ORGANIZATION

Animal fat production: Australia, Argentina, and Mexico







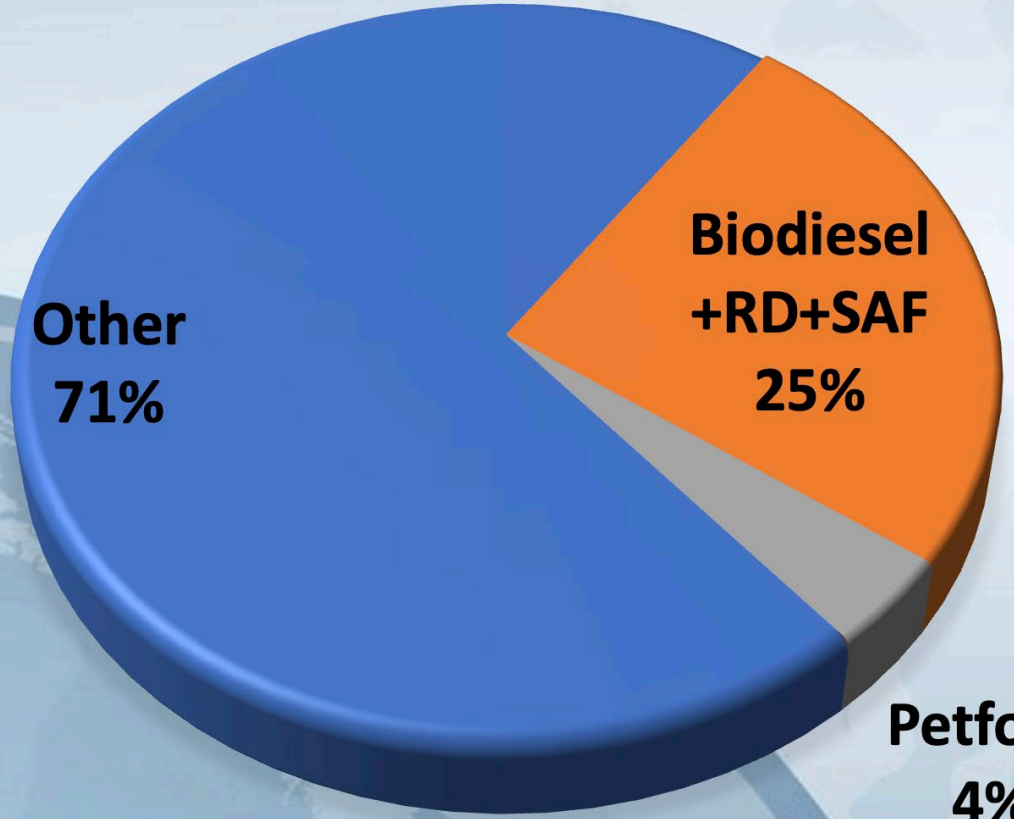
*: all land animal fats included

Sources: Australia – ARA, personal communication; Argentina, CSGA estimate ; Mexico, ANR estimate

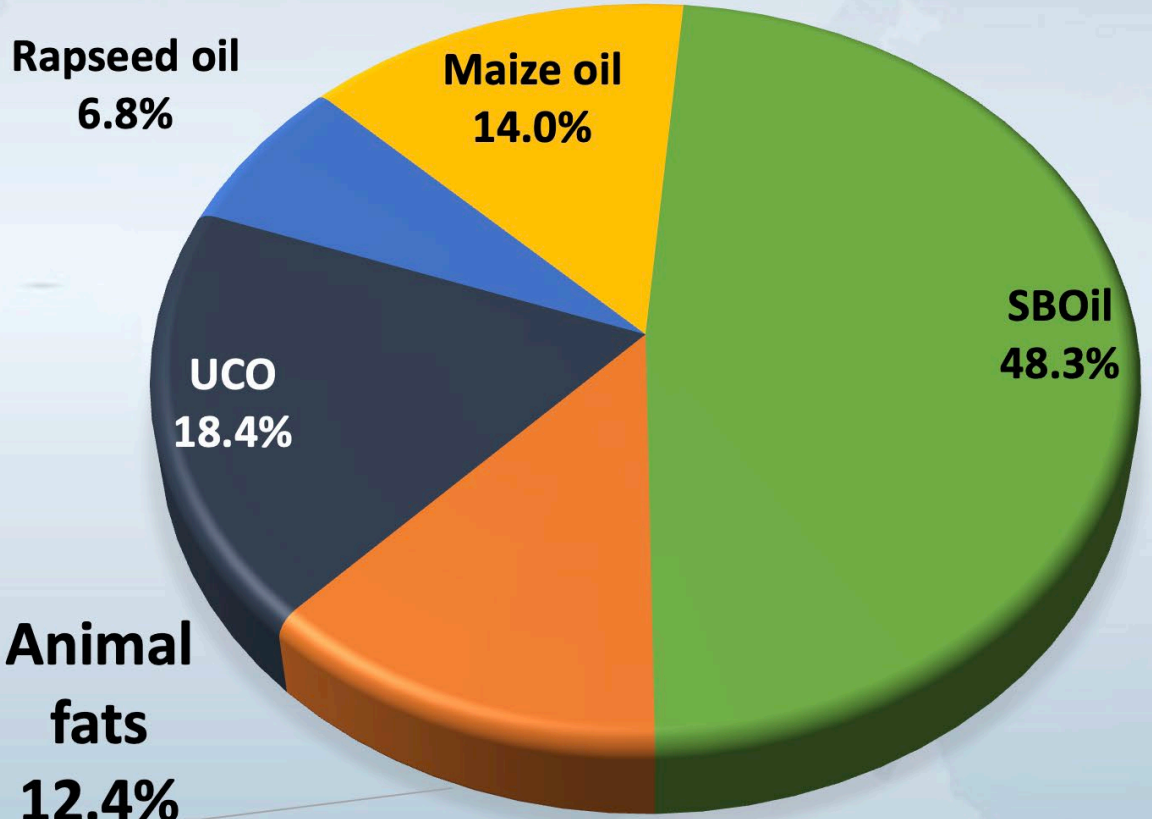
WRO
WORLD RENDERERS ORGANIZATION

USA

Animal fats (2022)[1] (4.7MM ton)



Biodiesel + GD + SAF (2022)[2] (11.8 BB litres)

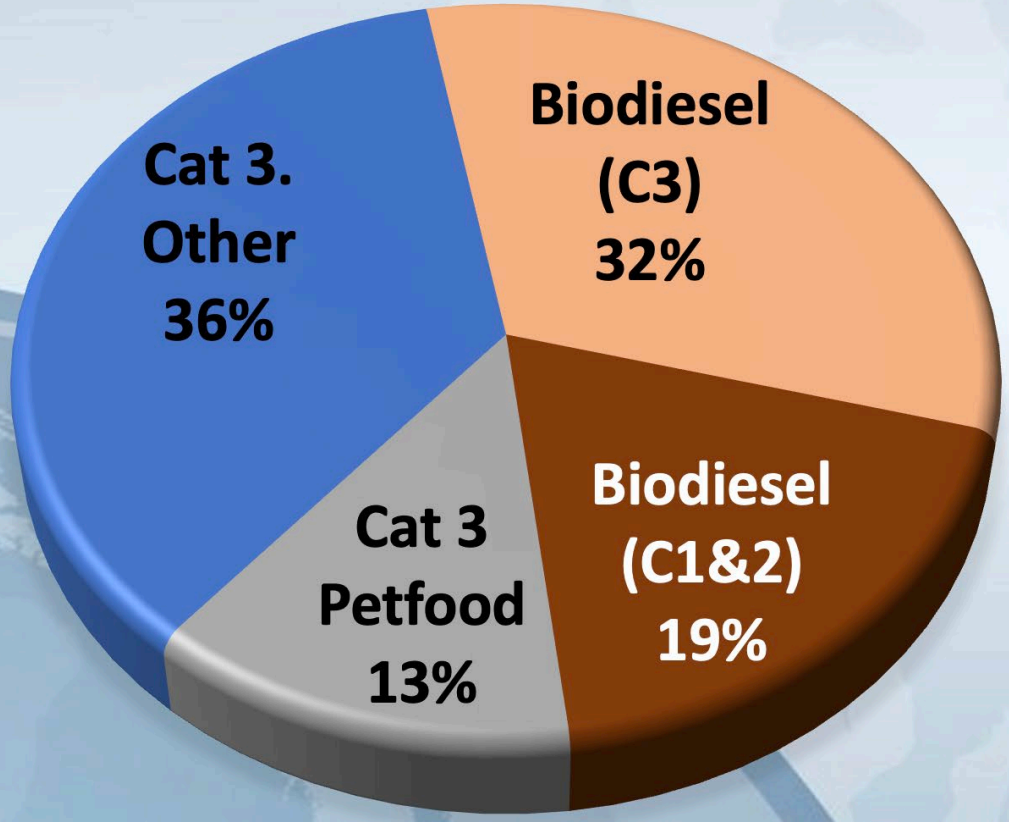


1: Dana J. Downing, Render Magazine, 2023 & 2: US EIA, Monthly Energy Review, 2023 and Clean Fuel Alliance America, Annual Report, 2022

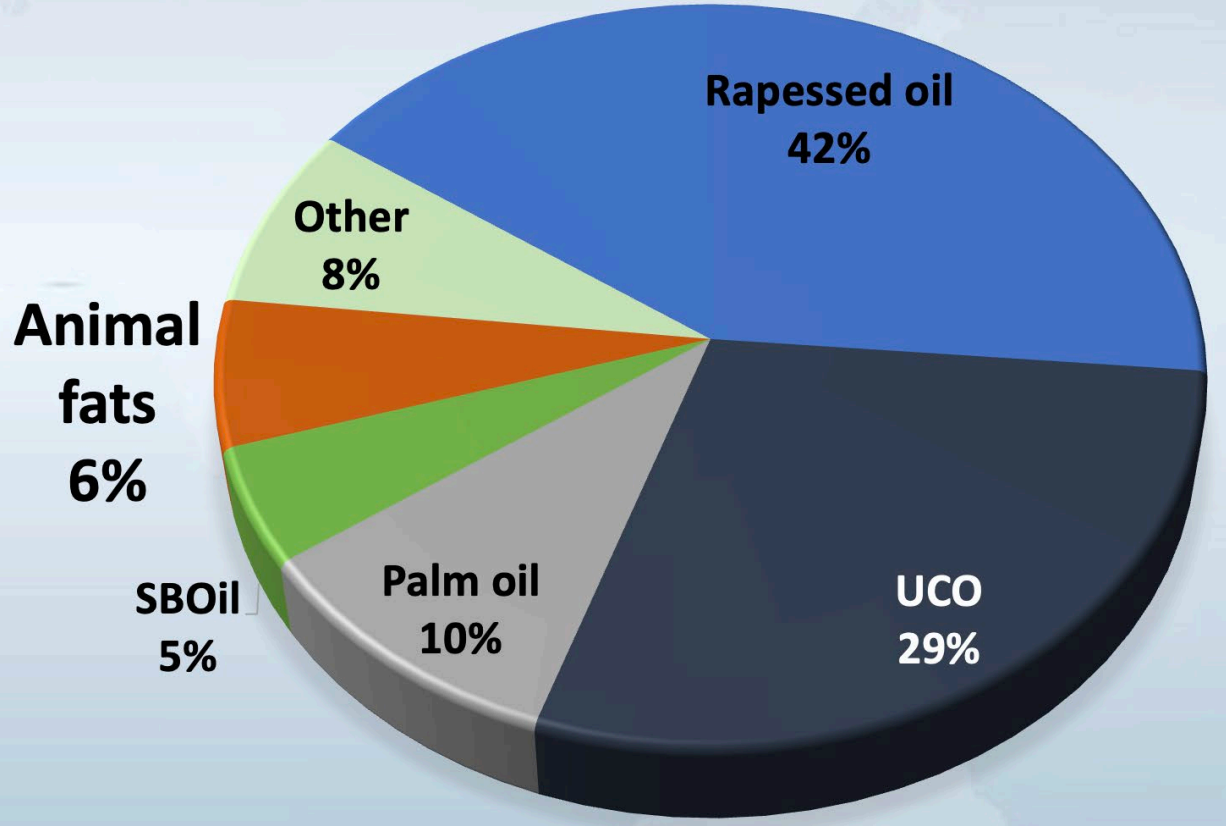
WRO
WORLD RENDERERS ORGANIZATION

EU

Animal fats (2022) [1] (2.9MM ton)



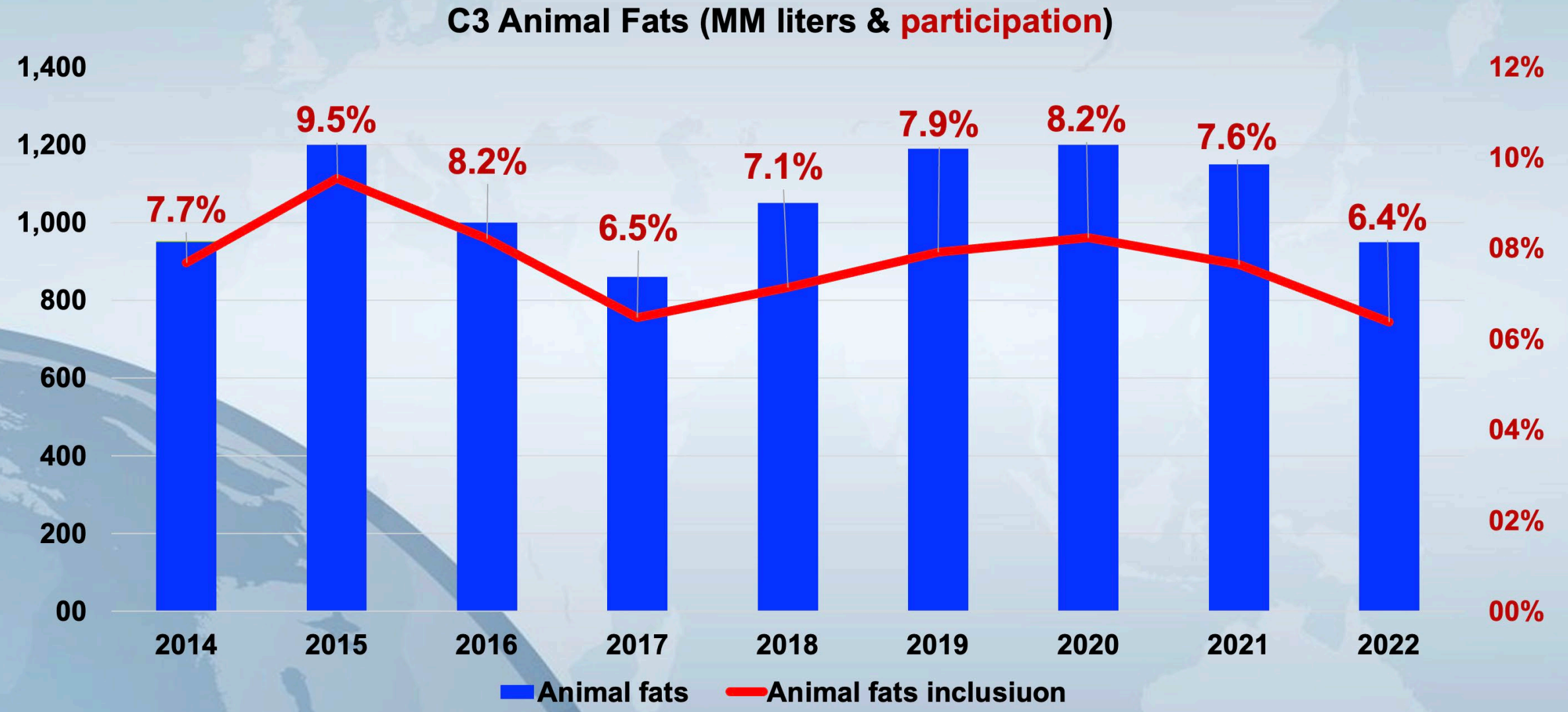
Biodiesel + RD + SAF (2022)[2] (16.1 BB litres)



1: Dirk Dobeelare, EFPRA Congress 2023 & 2: USDA, Biofuels Annual, European Union, 2023

WRO
WORLD RENDERERS ORGANIZATION

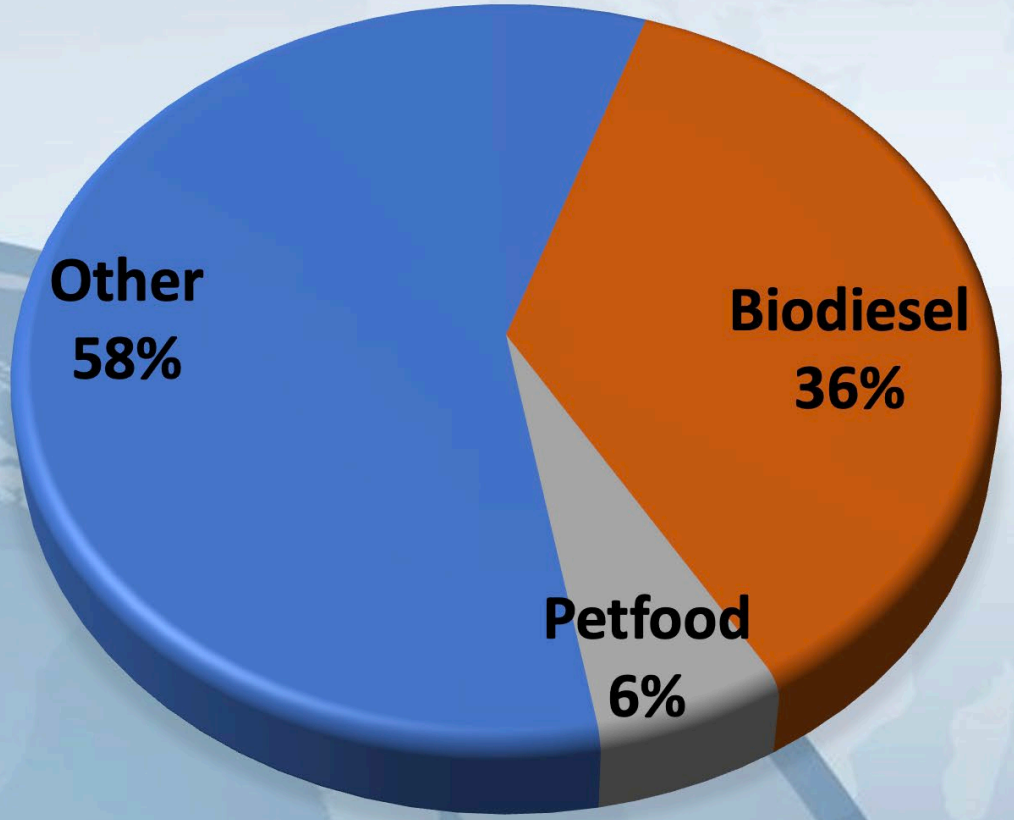
EU



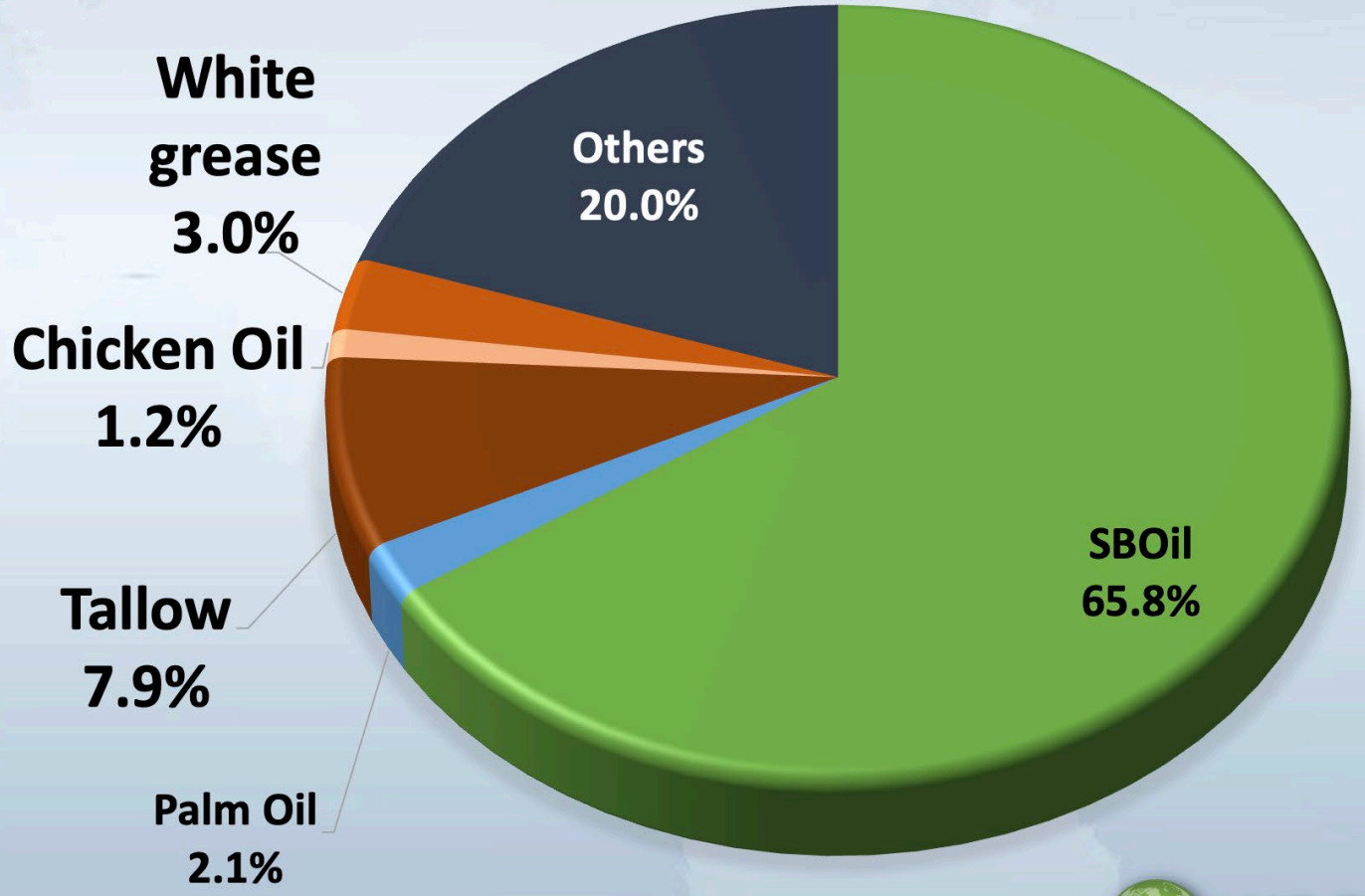
1: Dirk Dobeelare, EFPRA Congress 2023 & 2: USDA, Biofuels Annual, European Union, 2023

Brazil

Animal Fats (2022)[1] (2.1MM ton)



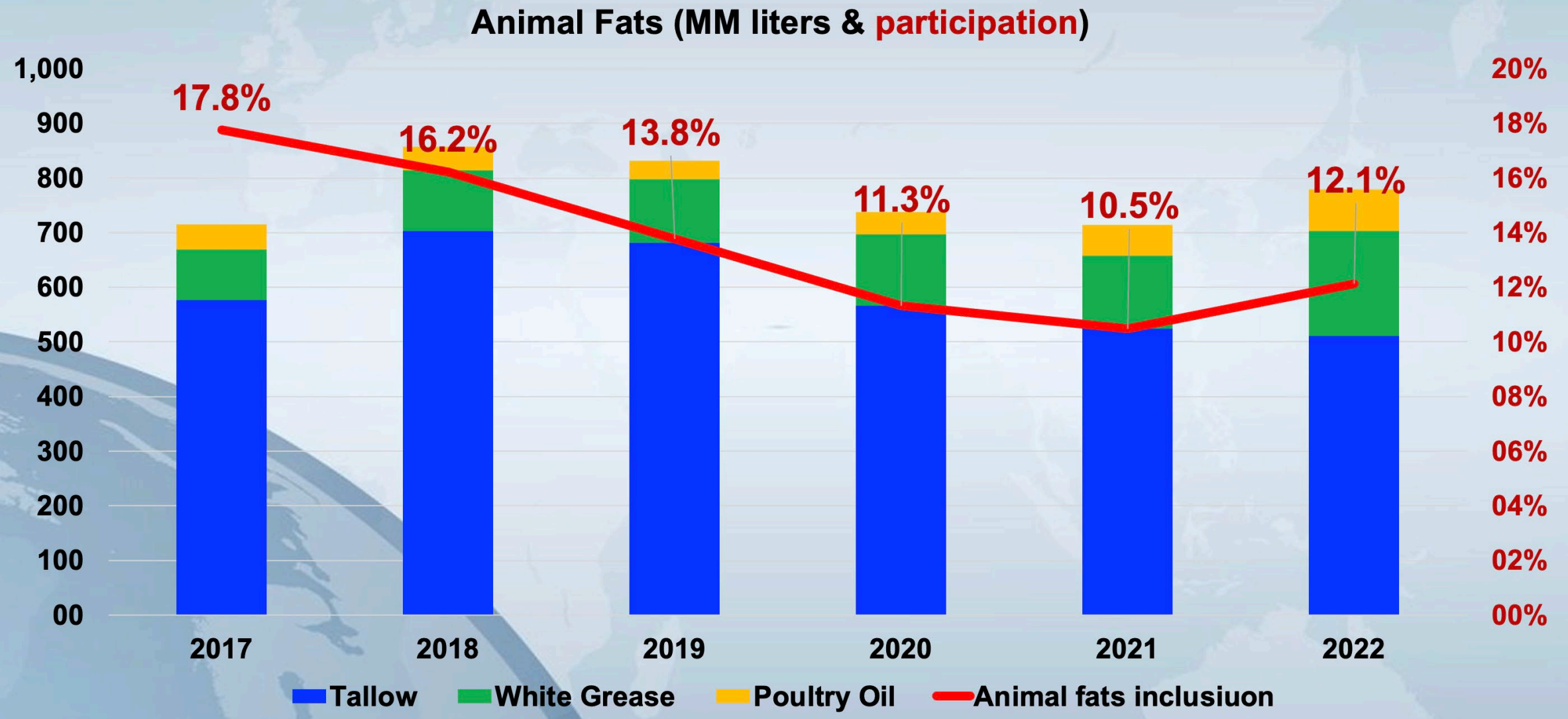
Biodiesel (2022)[2] (6.4 BB litres)



1: Anuário ABRA 2022 & 2: ANP, Painel Dinâmico de Produtores de Biodiesel, 2023

WRO
WORLD RENDERERS ORGANIZATION

Brazil



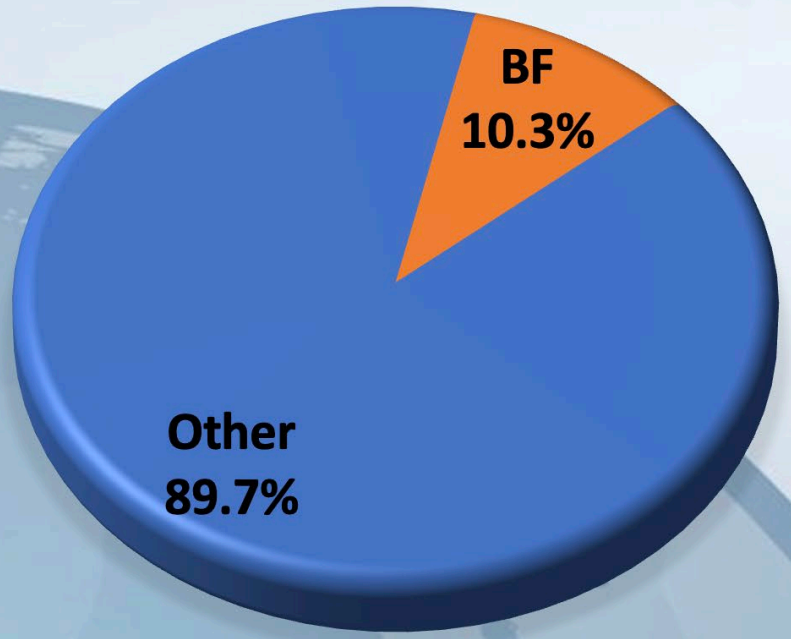
ANP, Painel Dinâmico de Produtores de Biodiesel, 2023

WRO
WORLD RENDERERS ORGANIZATION

Brazil - 2022

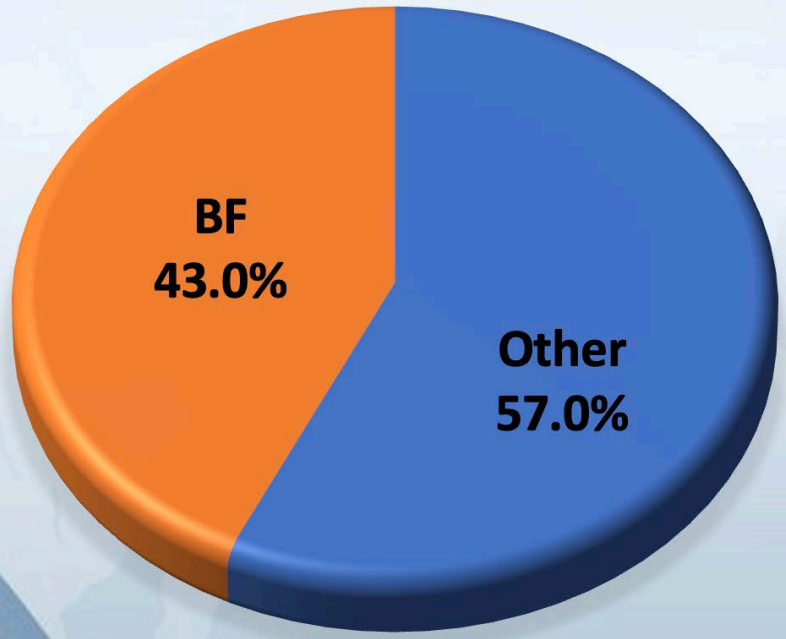
Poultry Oil

486 thousand ton



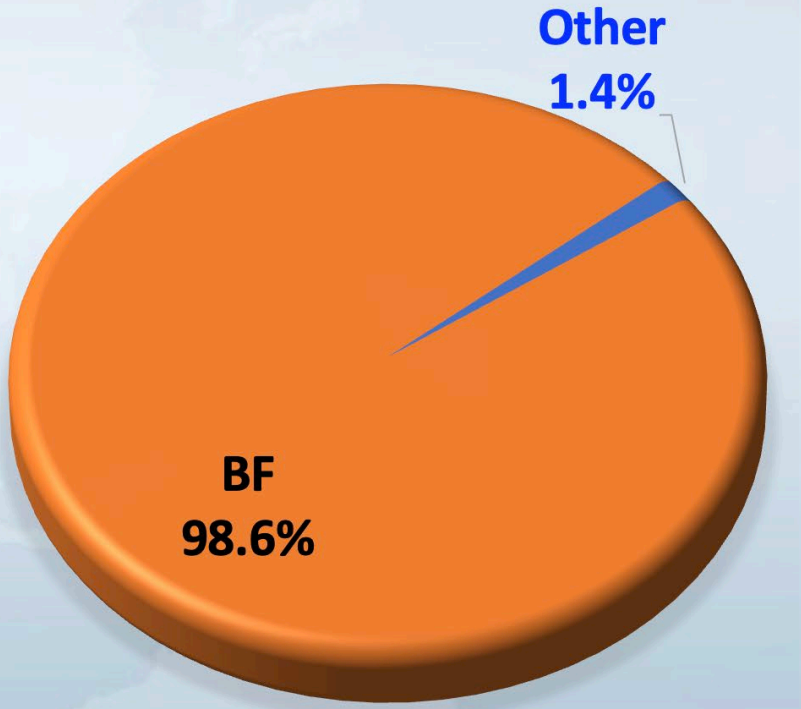
Beef Tallow

1,390 thousand ton



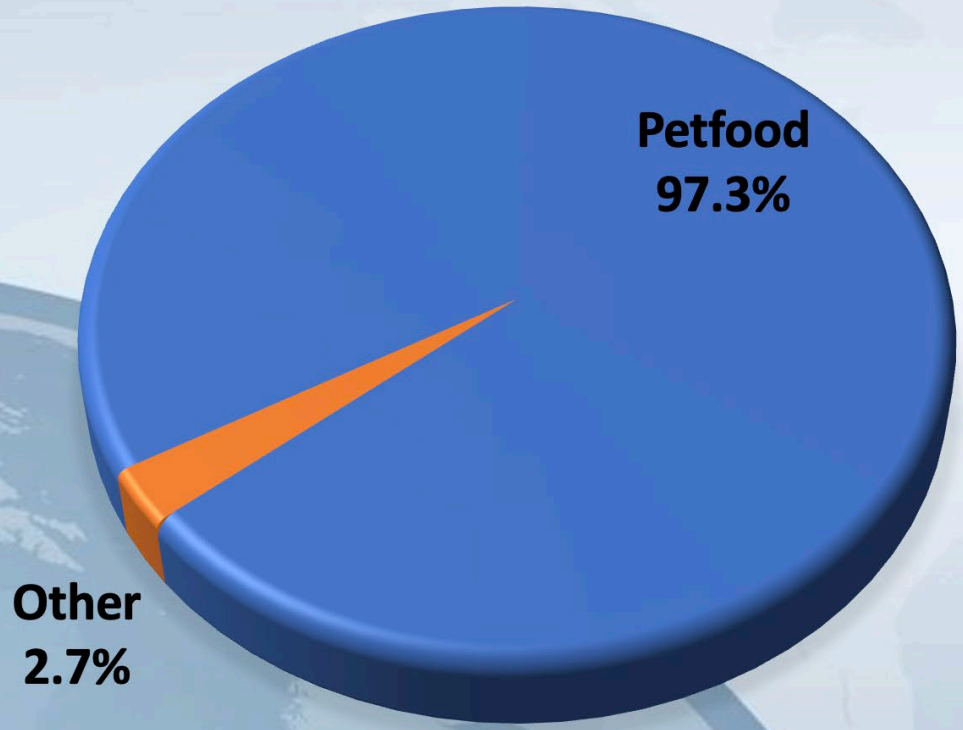
Swine Choice Grease

139 thousand ton

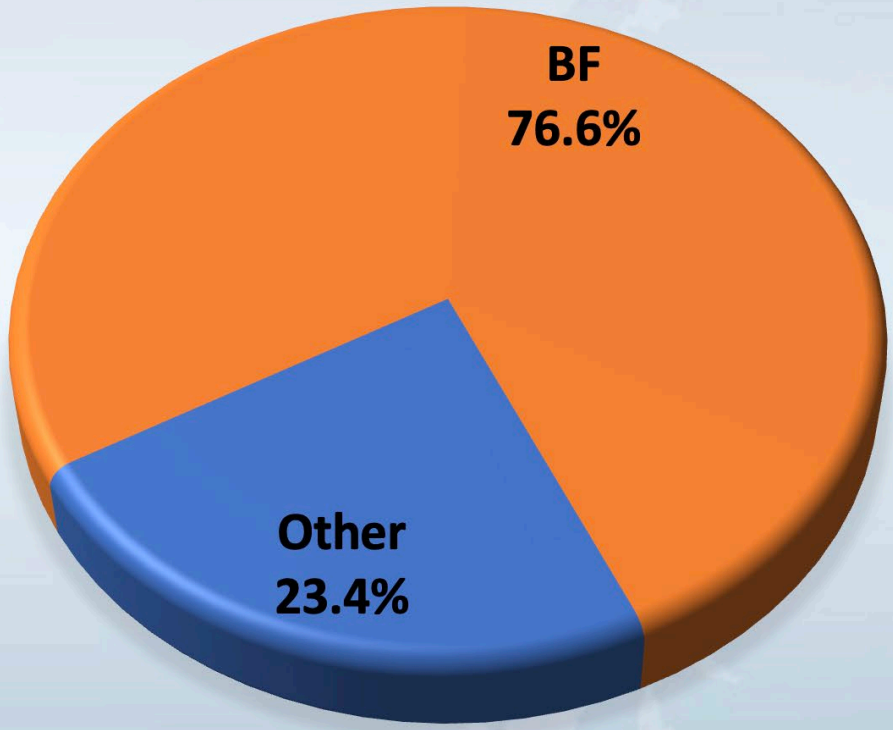


Australia - 2022

Poultry Oil – 75 thousand ton



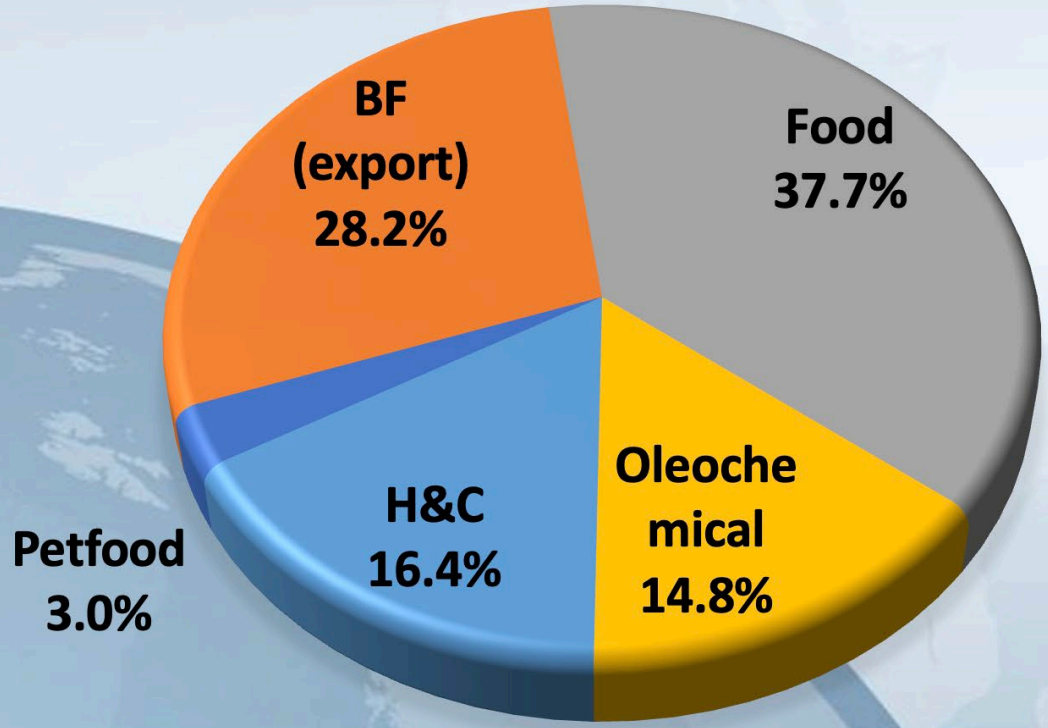
Beef Tallow – 550 thousand ton



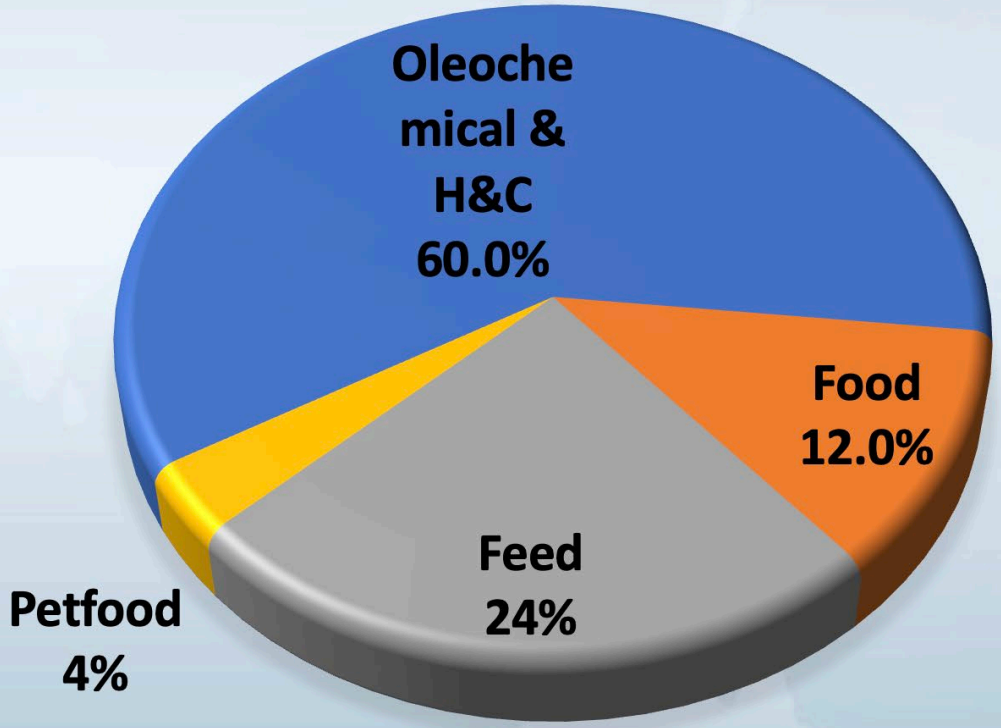
*vast majority to petfood

Argentina & Mexico - 2022

Argentina
Animal fats – 305 thousand ton



Mexico
Animal fats – 237 thousand ton



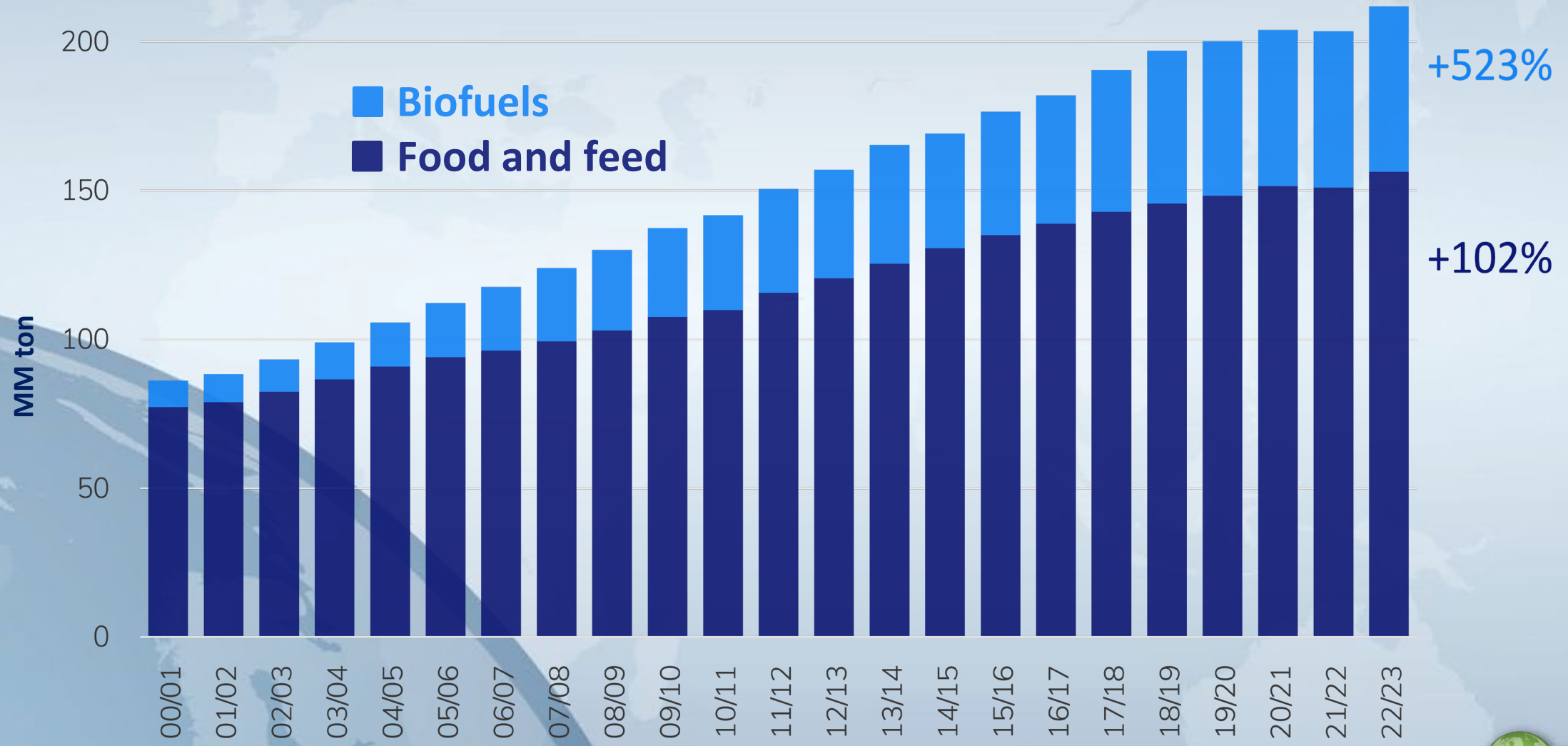
*“Animal fats are a ‘rigid’ resource (…) largely independent of demand.”**

Animal fat, a low footprint commodity, has limited supply

Who can supply the biofuel industry?

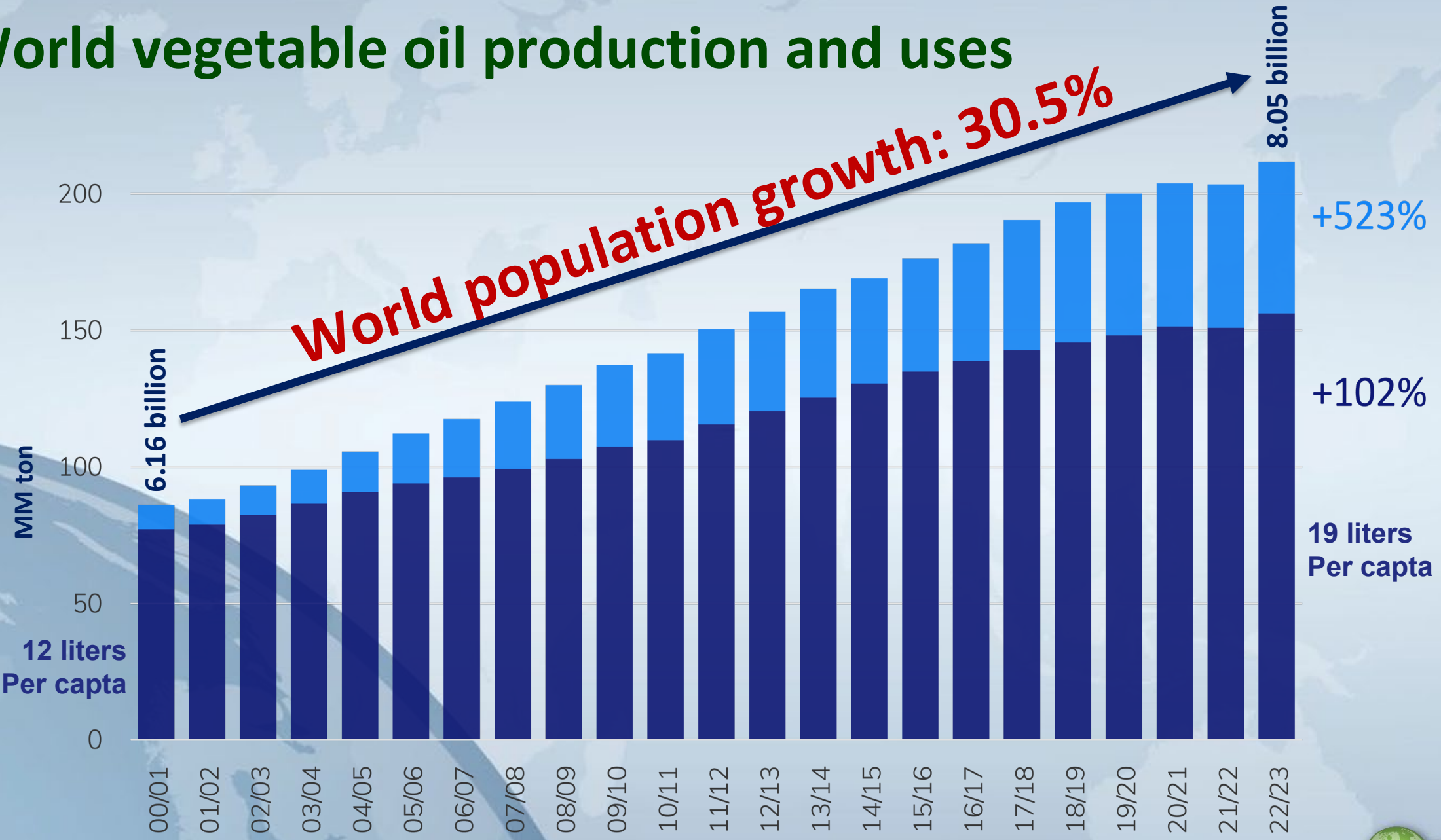
*: Dr. Cris Malins, The fat of the land, 2023

World vegetable oil production and uses



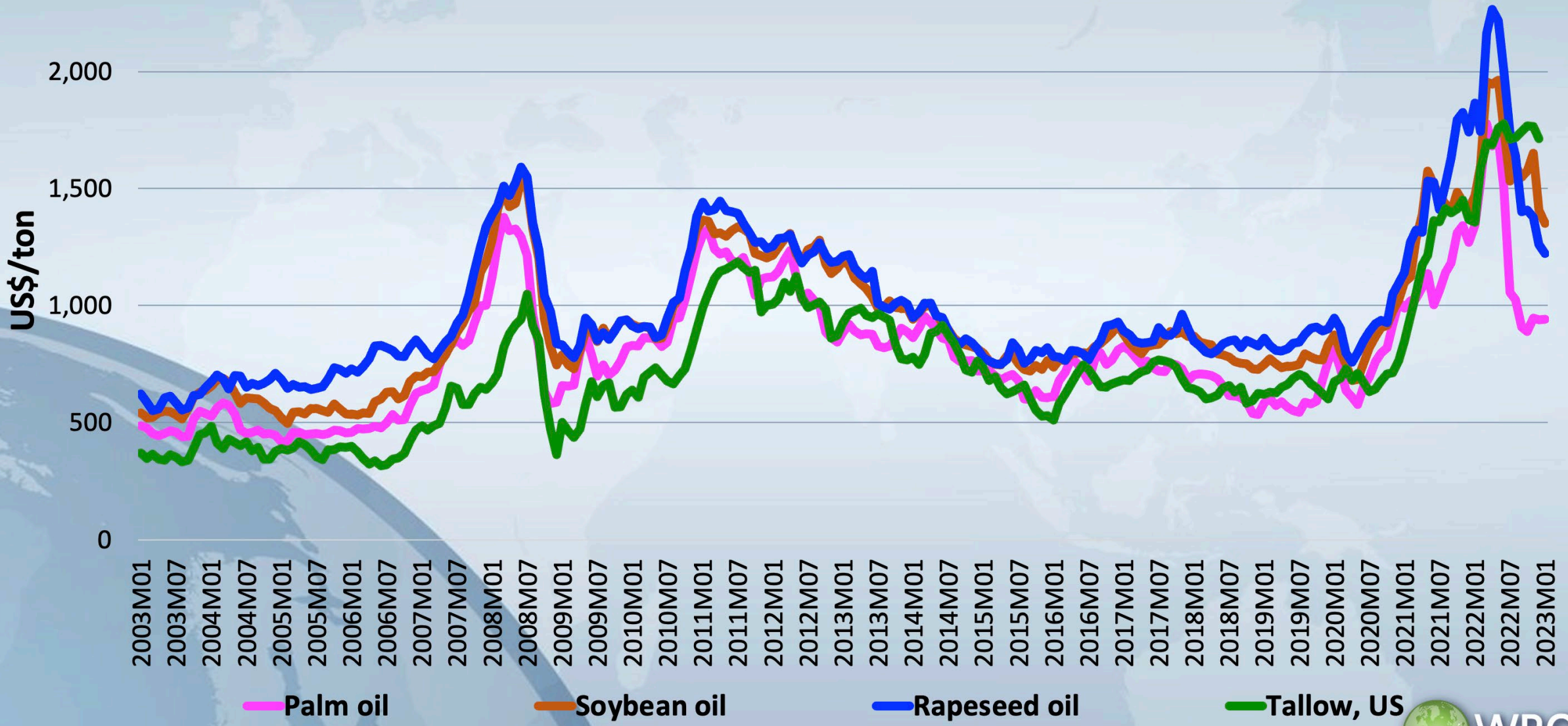
Source: Leonardo Rossetti, O&D de Óleos Vegetais: Com as perspectivas de aumento de mistura, 2023

World vegetable oil production and uses



Source: Leonardo Rossetti, O&D de Óleos Vegetais: Com as perspectivas de aumento de mistura, 2023

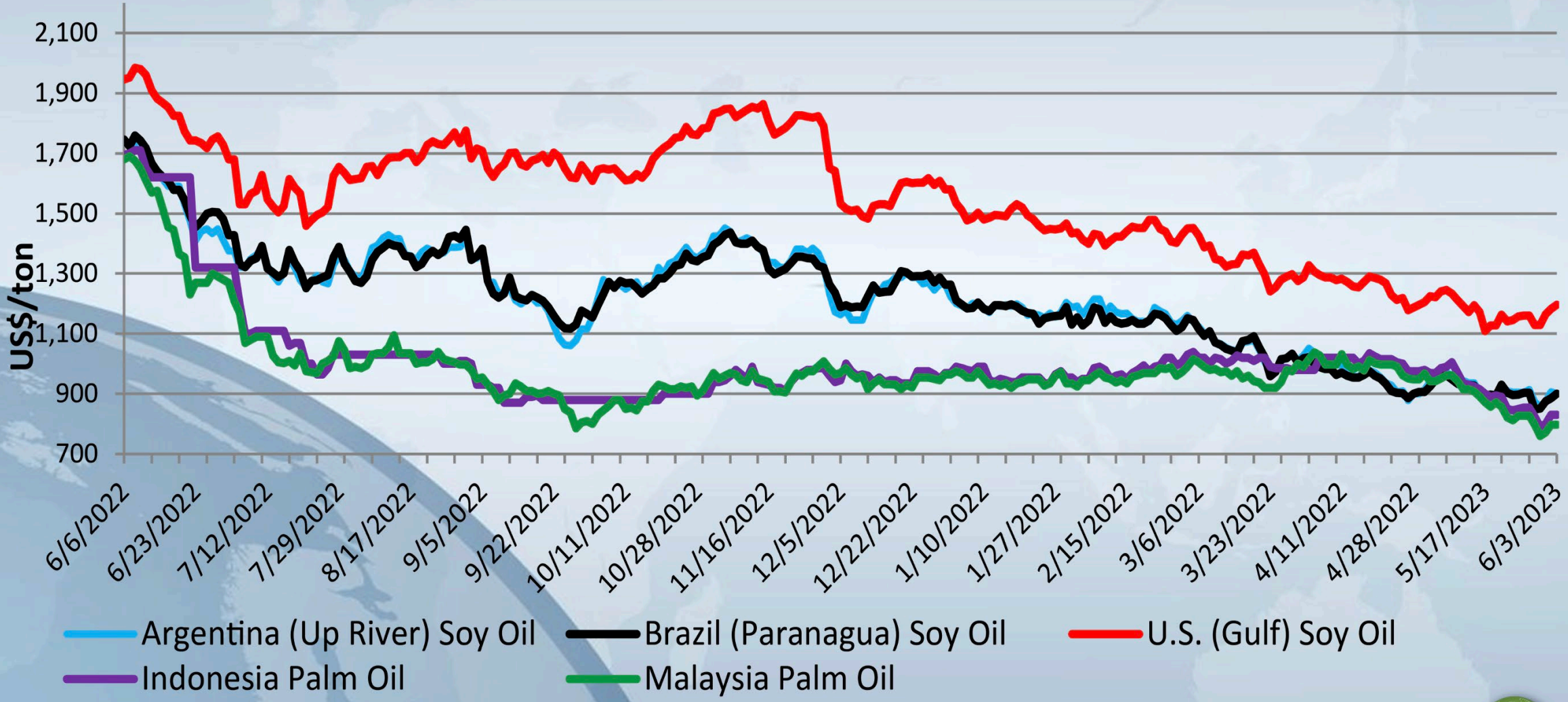
US – Tallow + Veg. oil



USDA, National Animal By-Product Feedstuff Report (Tallow/US/FOB) & World Bank Commodity Price Data (Other feedstuff)

WRO
WORLD RENDERERS ORGANIZATION

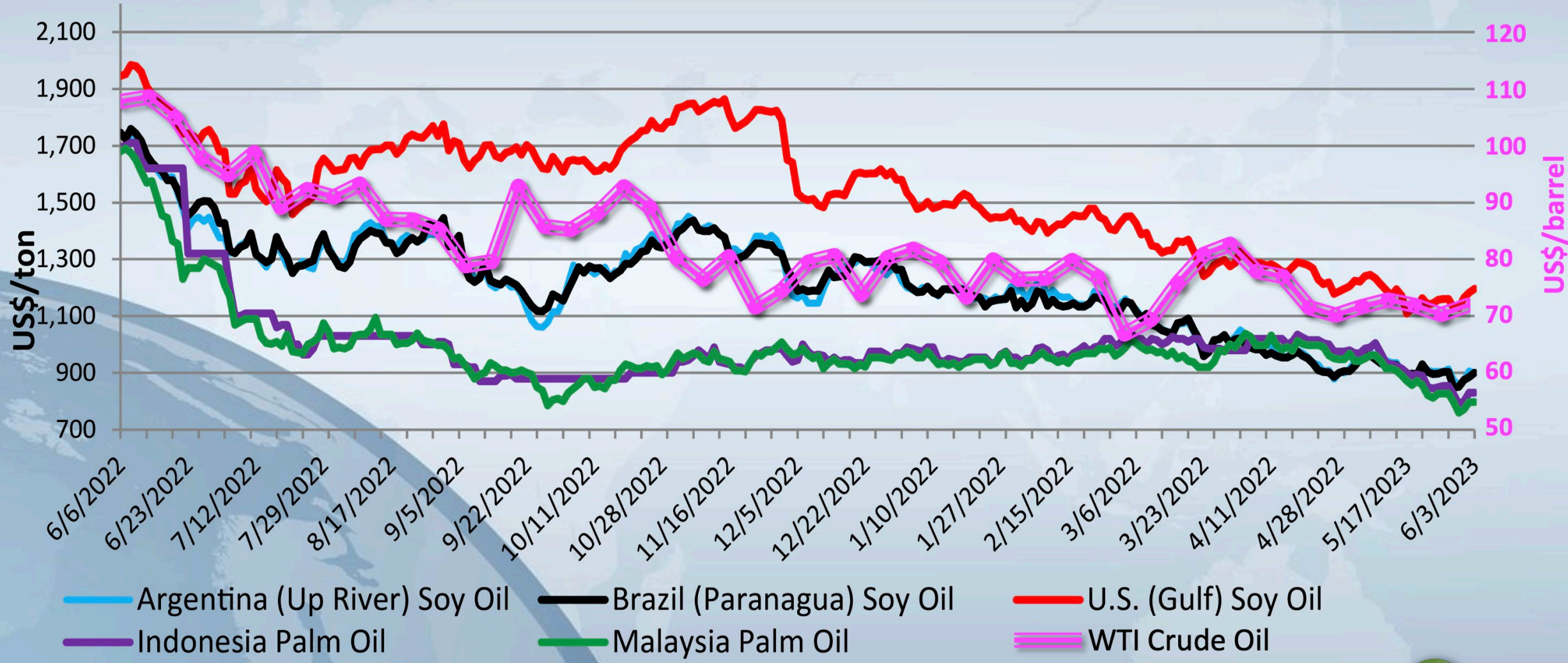
Veg. oil prices



Source: USDA, Oilseeds: World Markets and Trade, June 2023

WRO
WORLD RENDERERS ORGANIZATION

Veg. oil prices + Crude Oil

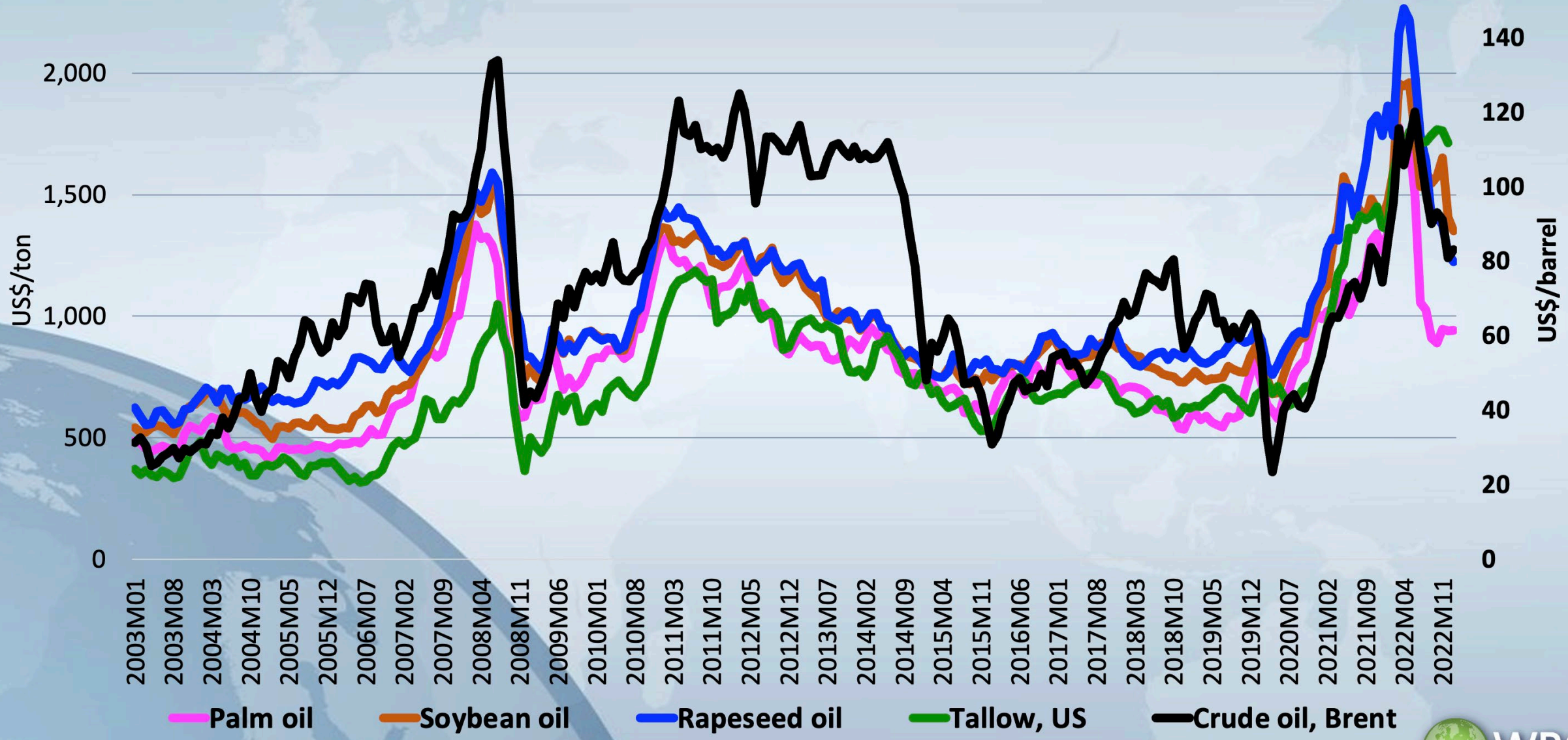


Source: USDA, Oilseeds: World Markets and Trade, June 2023

WTI Source: www.investing.com/commodities/crude-oil

WRO
WORLD RENDERERS ORGANIZATION

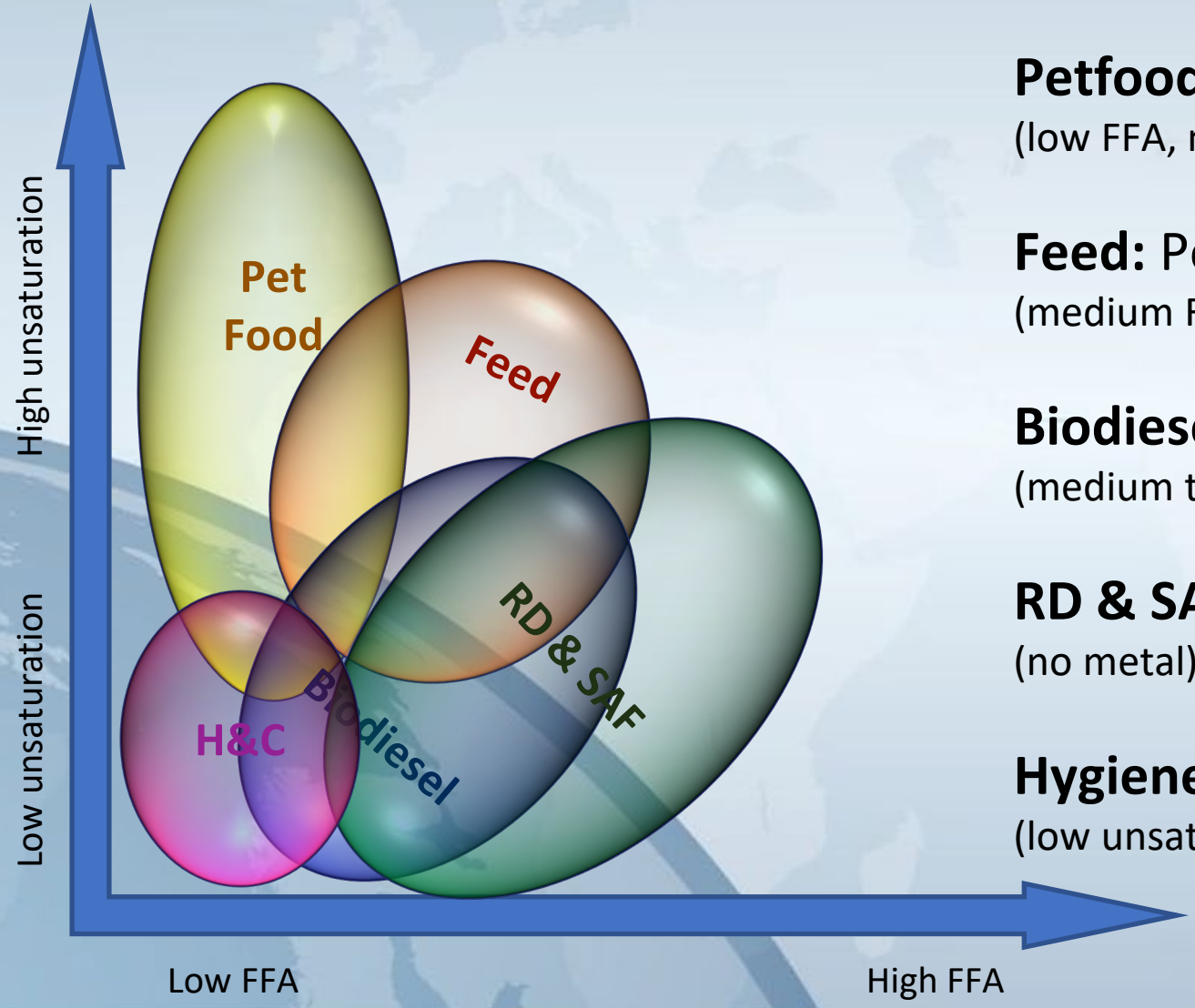
US – Tallow + Veg oil + Crude Oil



USDA, National Animal By-Product Feedstuff Report (Tallow/US/FOB) & World Bank Commodity Price Data (Other feedstuff)

WRO
WORLD RENDERERS ORGANIZATION

Each market has its own specs



Petfood: Fish oil, poultry oil, lard
(low FFA, no peroxide, no off flavour)

Feed: Poultry oil, choice white grease
(medium FFA, no peroxide)

Biodiesel: tallow, choice white grease
(medium to high FFA, no protein, low to medium unsaturation)

RD & SAF: tallow, porcine fat
(no metal)

Hygiene and Cleaning: Bleachable tallow / tallow
(low unsaturation saturation, bright, no polyethylene)

The balloons do not represent the quantitative consumption but rather the specifications' elasticity

CONCLUSIONS

Rendering by-product is:

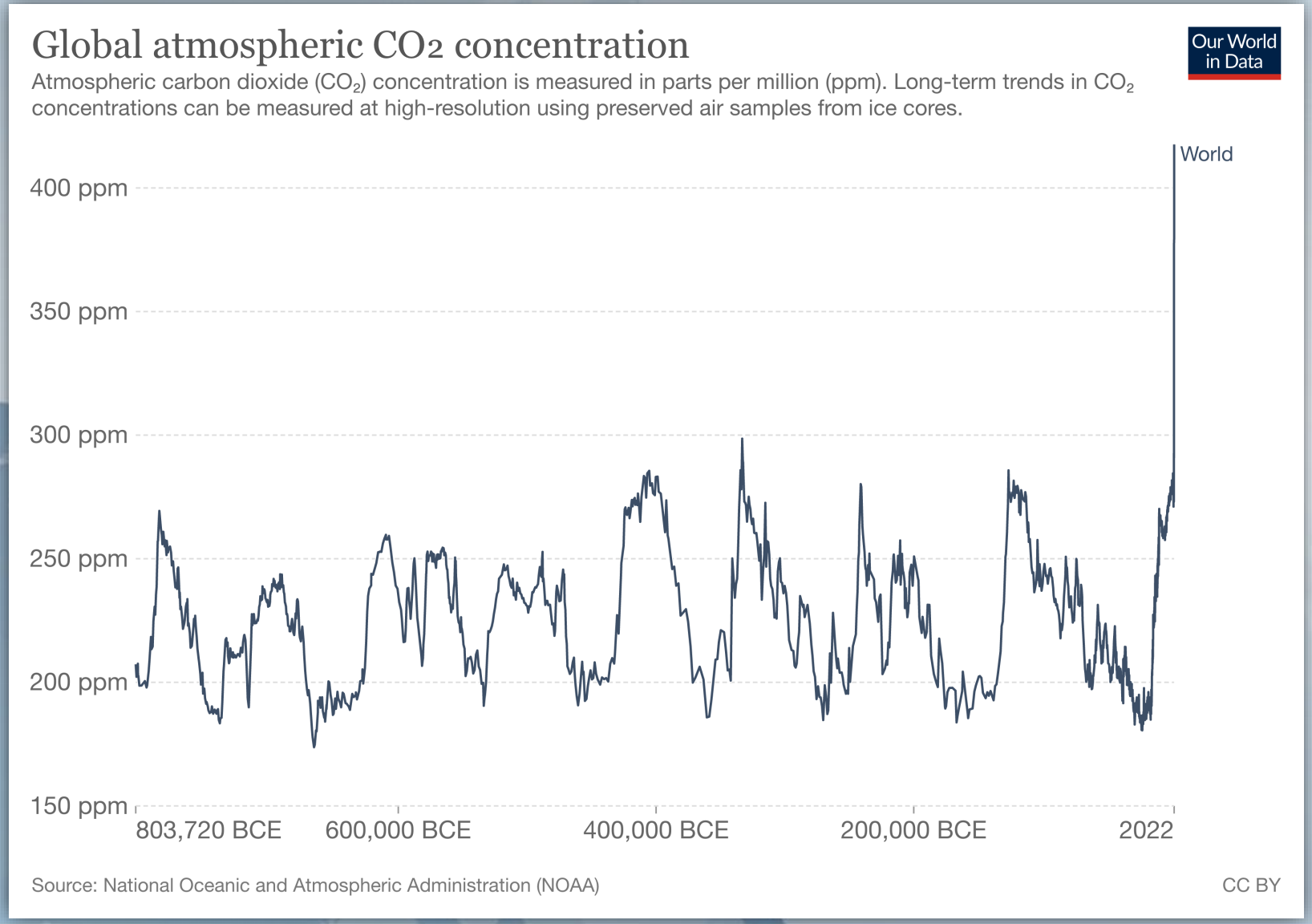
*“sell what they make rather than make what they sell.”**

*: Guidance for Rendering Plants Certifying in: The Rendering Code of Practice and AFIA’s FSC36 Safe Feed/Safe Food

Rendered protein meals and fats are the circular link of the meat, egg and fishery chain

Sustainable, natural and **affordable** resource for petfood, biodiesel, RD, SAF, oleochemicals, cosmetics…

CO_2 levels are rising as never observed!



In 2023, 421ppm of CO_2 is 40% above the highest level ever “estimated” by the least 800,000 years

Decarbonization is mandatory!

Feedstuff with a low carbon footprint will have a robust market demand and will be a valuable commodity.

Tallow, lard, poultry oil, recovered greases, UCO…

Meat and bone meal, feather meal, blood meal, poultry meal, cookie meal, brewers grains…

The main mission of WRO is to ensure fair rules for trade

WOAH, FAO, LEAP, IFIF, GAPFA

Natural & Sustainable

The essence of all rendered products!

Thanks!

Lucas Cypriano

td@worldrenderers.net

+55 41 99661 8690

WRO
WORLD RENDERERS ORGANIZATION