Trade 4 Sustainable Development

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Trade and food standards: Measuring Distance in Maximum Residue Levels of Pesticides

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Outline

- EU policies on pesticides and Antibiotics in the context of GD & F2F
- Propose a new measure of the distance in MRLs.
- Results
- Conclusion

Link between SPS and SDGs

Pesticides use under review in the EU

- The European Green Deal and the F2F Strategy have set ambitious objectives to build a more sustainable and healthier food system. Implementing the necessary measures can have a significant impact on the competitiveness of EU producers as well as international trade in food.

In particular:

  - The use and risk of chemical pesticides should be reduced by 50% by 2030; the use more hazardous pesticides should be reduced by 50% by 2030.
  - Nutrient losses should be reduced by at least 50% and the use of fertilisers by at least 20% by 2030.
  - Sales of antimicrobials for farmed animals and in aquaculture should also be reduced by 50% by 2030.

- Food or feed for export to the EU cannot contain pesticide or antibiotics residues that exceed the MRLs decided by the Commission and the Council on the basis of a risk assessment to consumer health by the European Food Safety Authority (EFSA).

The actual legislative framework in Pesticides

- Two key EU Regulations on Pesticides:
  - Regulation (EU) 1107/2009 (Pesticides Regulation) sets out the framework for placing active substances and PPPs on the EU market, whereby active substances can only be approved if they comply with both the hazard criteria as well as the risk assessment criteria.
  - Regulation 396/2005 (the MRL Regulation) controls pesticide residues and sets out the framework for setting MRLs in food and feed. The key aim of this Regulation was to support intra-community trade in the single market by establishing EU-harmonised MRLs.
  - The MRL Regulation defines the 'maximum residue level' (MRL) as the upper legal level of a concentration for a pesticide residue in or on food or feed based on good agricultural practice, and the lowest consumer exposure necessary to protect vulnerable consumers. Unlike approval for an active substance which requires environmental risks to be considered, MRLs are established solely on health grounds ('to protect vulnerable consumers') and do not consider environmental risks.
  - By the end of 2018 MRLs were established for 486 substances approved in the EU and 247 non-approved substances on a broad range of agricultural commodities.

The actual legislative framework in Antibiotics

The EFSA coordinates the EU's Antimicrobial Resistance (AMR) Surveillance Programmes in food-producing animals as directed by Directive 2003/99/EC and Commission Implementing Decision (EU) 2020/1729. Additionally, since 2019, the EMA has been analyzing the sales and use of antimicrobial products for animals in accordance with the guidelines of Regulation (EU) 2019/6. These regulations revise and substitute the previous Directive 2001/82/EC.

- Regulation (EU) 2019/6 establishes a package of rules for the sale, manufacture, import, export, supply, distribution, control and use of veterinary medicinal products.

- Regulation 2019/4 of 11 December 2018 on Medicated Feed →contains a complete prohibition on the use of antimicrobial veterinary medicines for prophylactic treatments.

- Regulation 2019/6 of 11 December 2018 on Veterinary Medicinal Products → Article 107.1 introduces a general principle that antimicrobials cannot be used routinely or to compensate for poor husbandry.

Why pesticides standards differ

- The ambition of the EU is to raise the level of standards in exporting countries.
- Whether an exporting country is willing to conform to EU standards or not will presumably depend on (a) how costly compliance is, and (b) the importance of the EU as an export market for its products.
- Standards may differ because countries interpret the science differently (which in turn may be a function of the strength of vested interests affected by these standards in each country), because of their different exposure to specific risks or different risk preferences or risk management approaches.
- The measurement of harmonization or reciprocity of standards has been the subject of a stream of recent investigations on heterogeneity across countries for SPS and standard-like NTM regimes, using MLRs and other policies that can be aggregated meaningfully. Several indicators have been used in the literature to measure the impact of standards on trade.

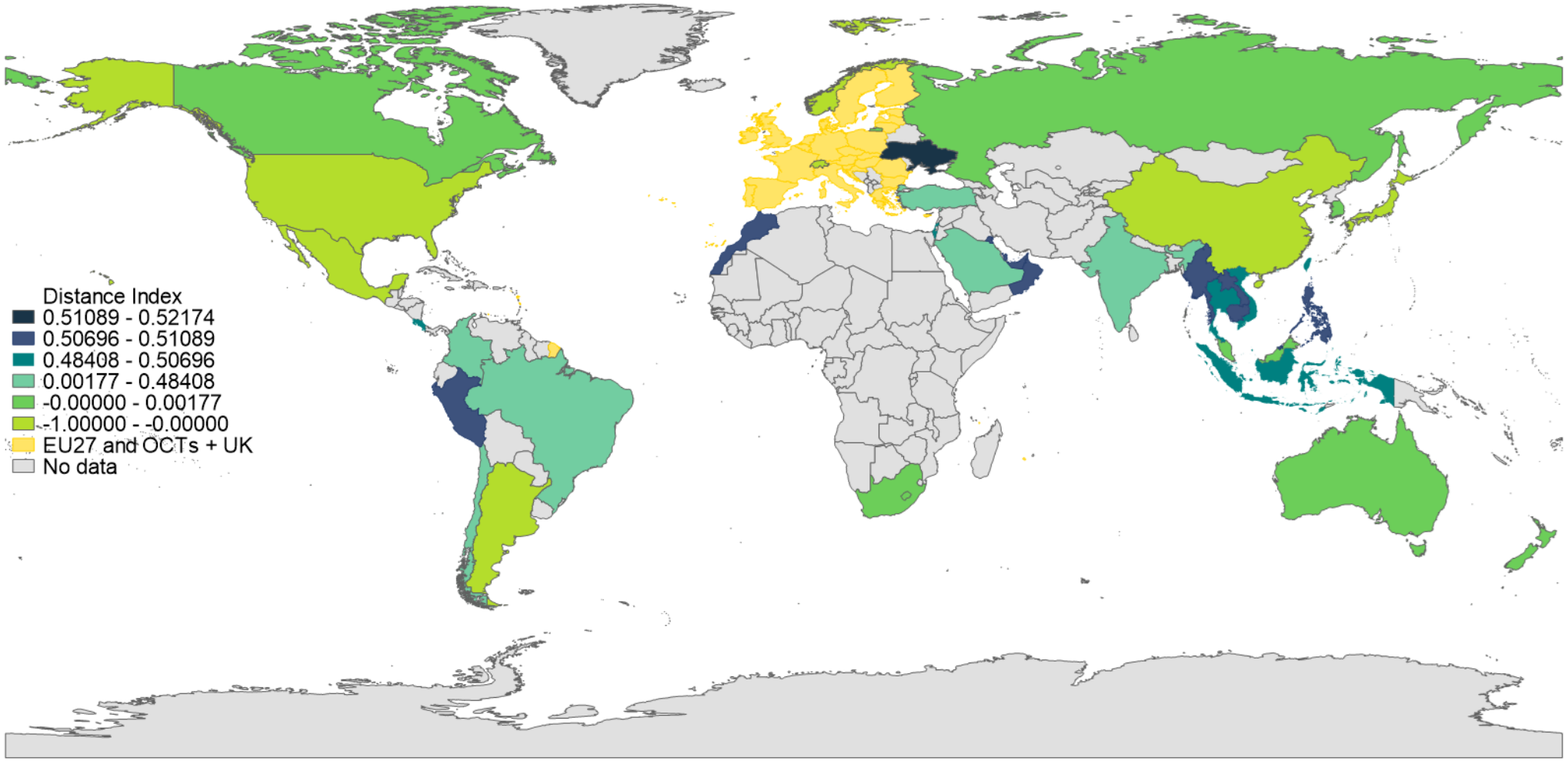
Measuring MLRs harmonization

We propose the following adjusted distance (AD) between the two countries i and j (i ≠ j) for product k and class of pesticides h:

$$AD_{ijkhf} = \frac{1}{N_{Kfh}} \sum_{s \in h} \frac{MRL_{i,k,s} - MRL_{j,k,s}}{Max\left(MRL_{k,s,f}\right) - Min(MRL_{k,s,f})}$$

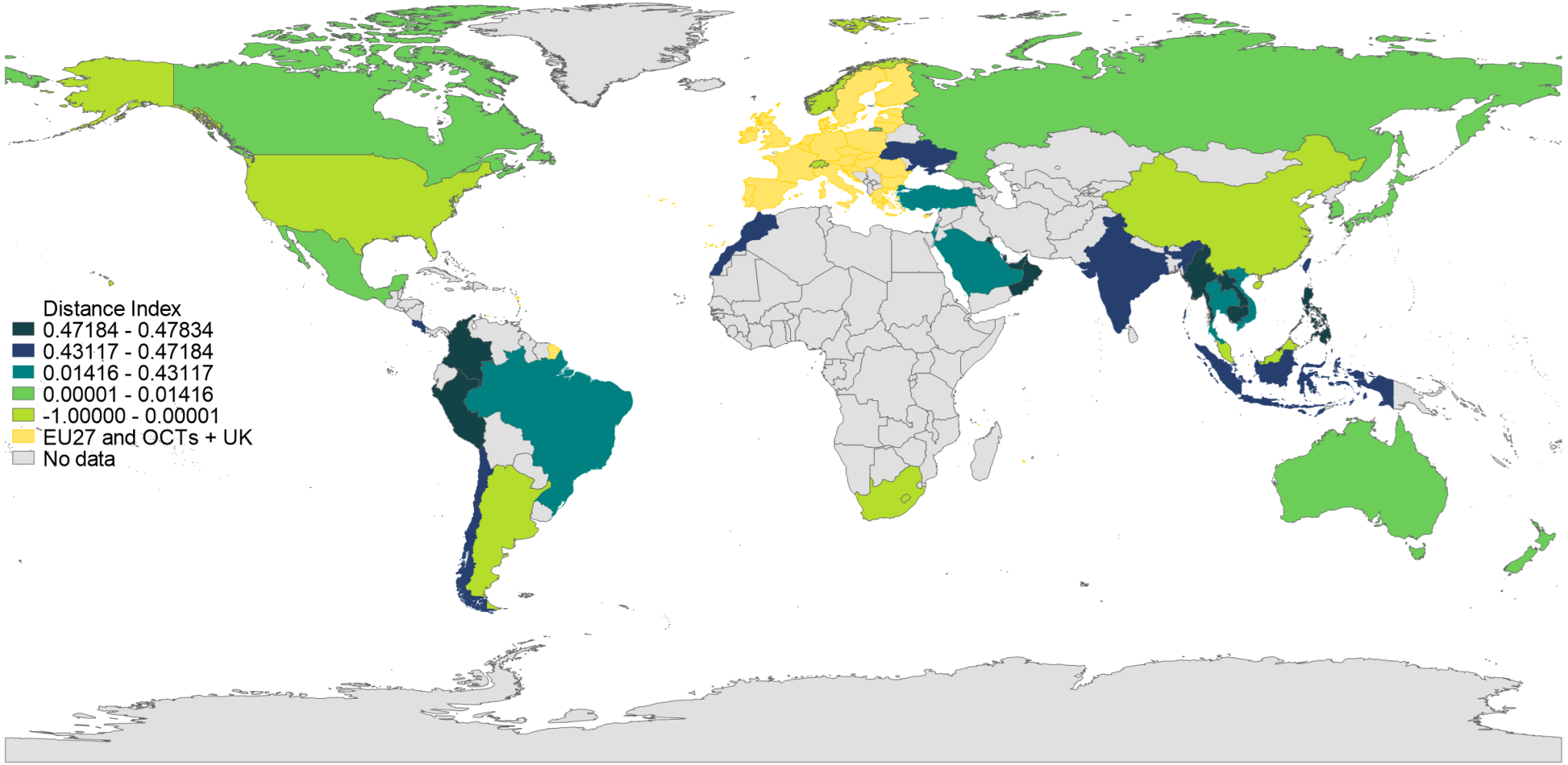
where N_{kfh} denotes the number of chemicals in chemical class *h* used in the production of commodity *k*. $MRLi_{ks}$ is the MRL set in the exporting country *i* for pesticide s and product *k*. MRL_{jks} is the MRL set in the importing country *j* for pesticide *s* and product *k*. $Max(MRL_{ksf})$ is the greatest MRL for product *k* and substance *s* for typology *f* and $Min(MRL_{ksf})$ is the lowest MRL for the same pair of product/ substance

Mean of Distance NDA Index of Country from EU MLR



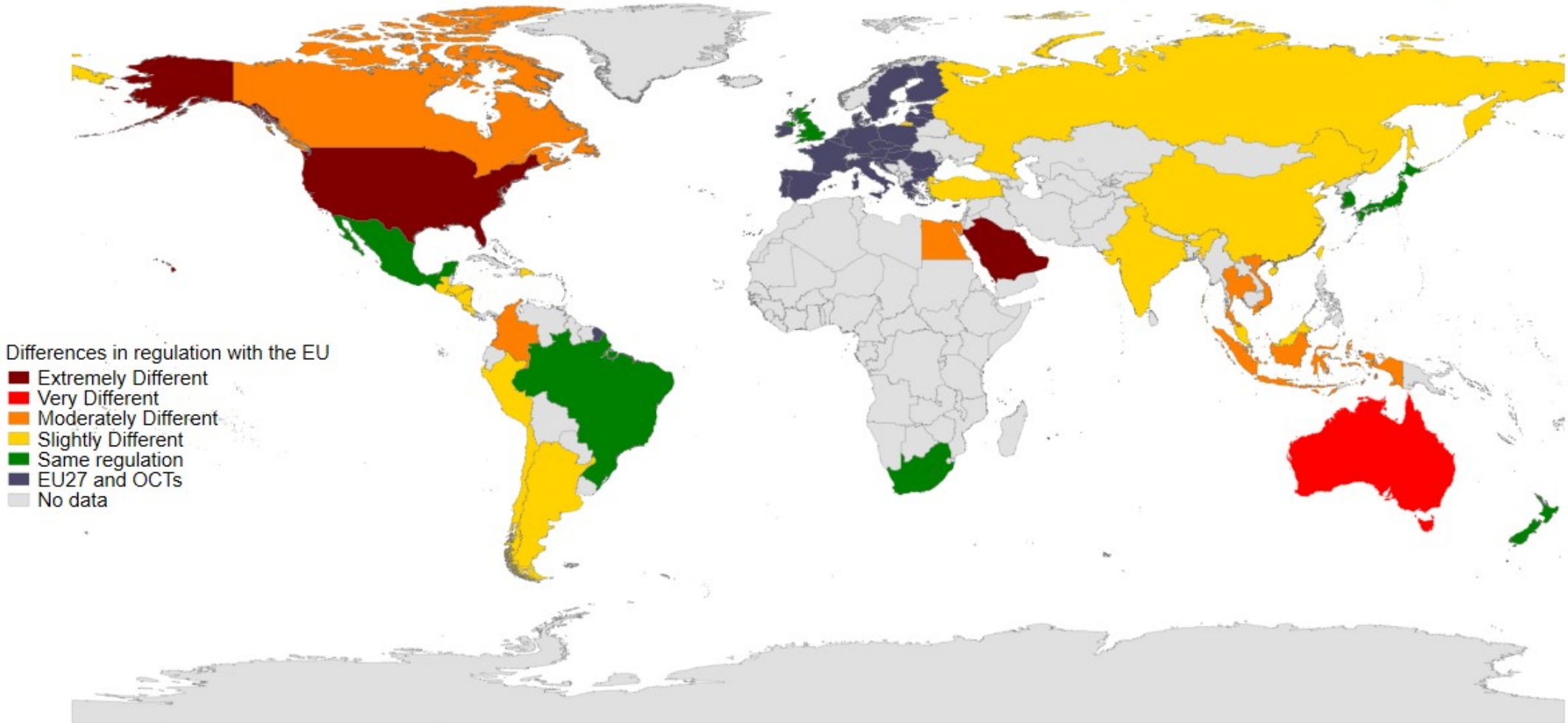
Data source: Authors elaborations on data Homologa 2020

Mean of Distance NDSL Index of Country from EU MLR



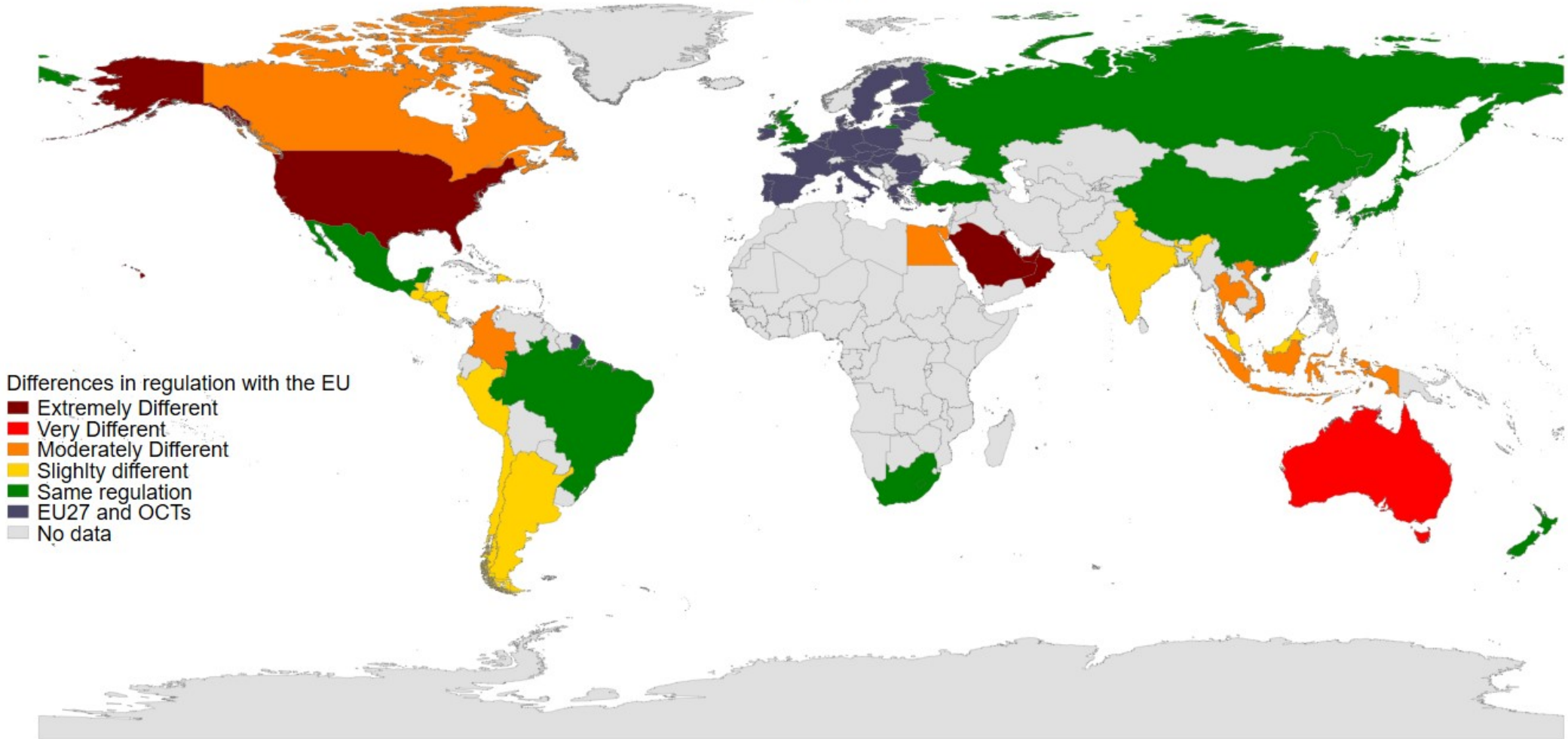
Data source: Authors elaborations on data Homologa 2020

Differences in Antibiotics Regulation between the EU and its partners on meat products



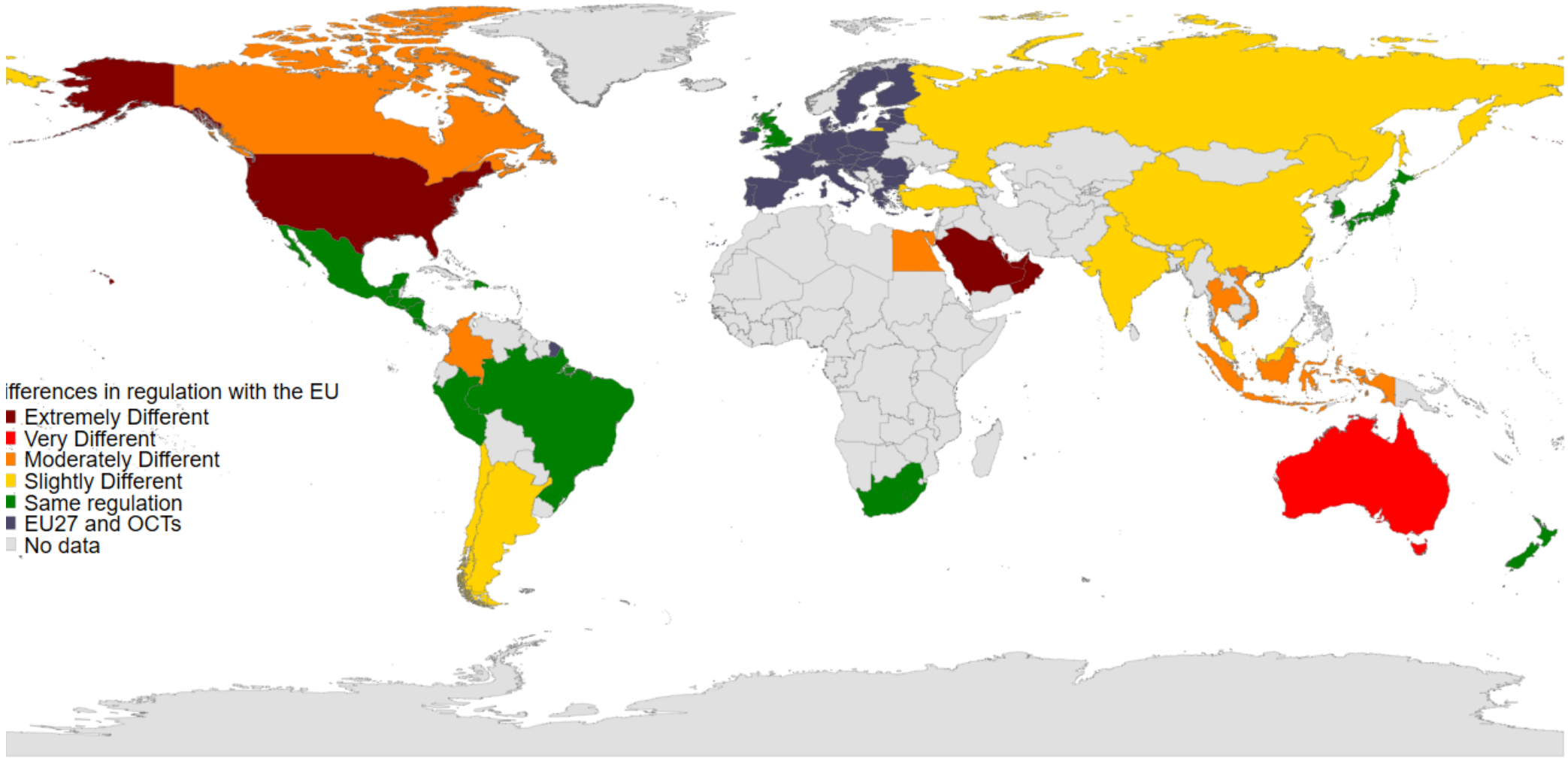
Data source: Authors elaborations on BCGlobal 2020

Turkey Meat



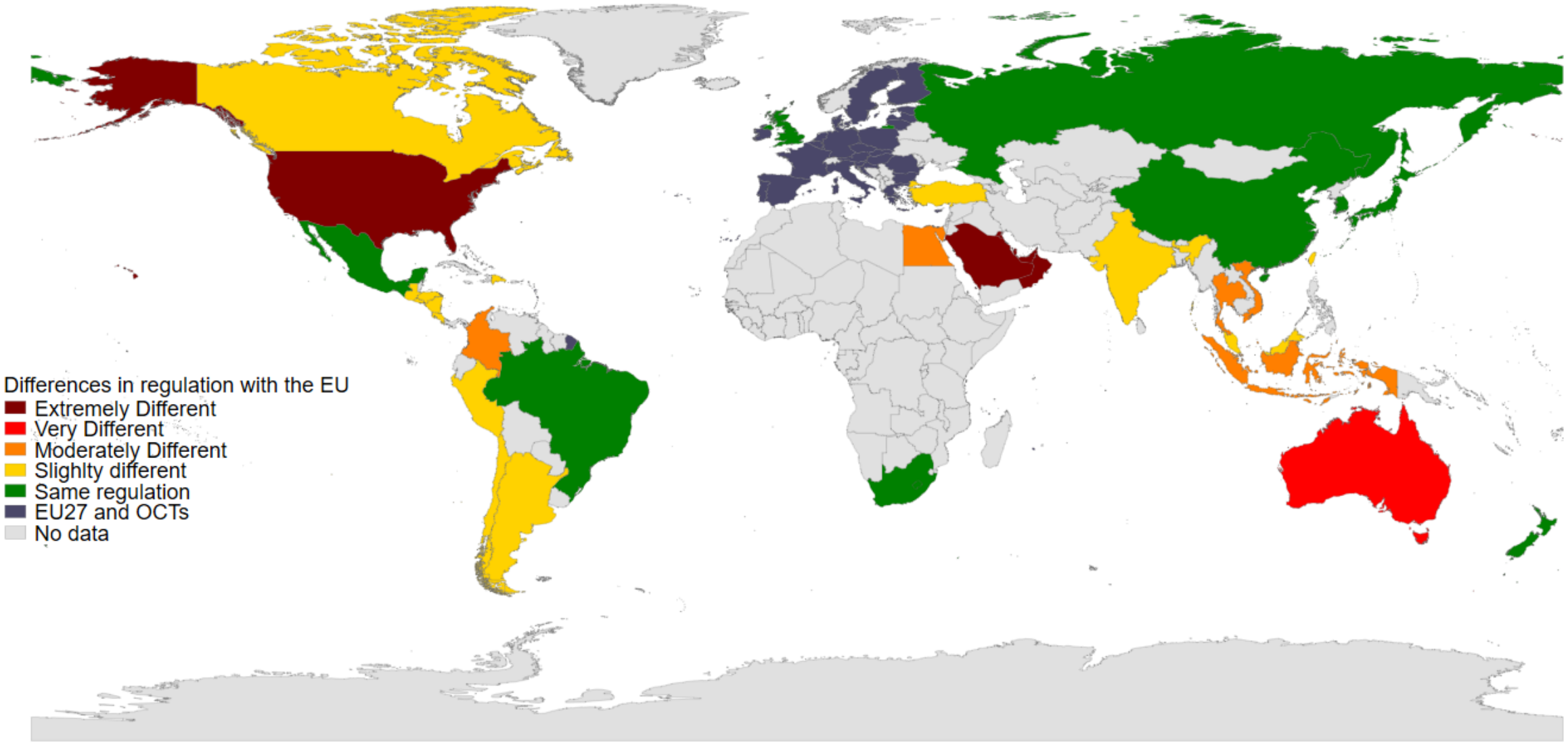
Data source: Authors elaborations on BCGlobal 2020

Swine Meat



)ata source: Authors elaborations on BCGlobal 2020

Chicken Meat



Data source: Authors elaborations on BCGlobal 2020

Conclusion

- The results show that in the following years it will be crucial for discussion tables on SPS measures to focus on the substances that are considered moderately and mildly toxic, which are the ones where the countries appear to be more heterogeneous.
- Even in antibiotics a certain degree of heterogeneity emerges.
- The harmonization of standards could stimulate exports and increase food safety.
- The ongoing liberalization process, through FTAs, should facilitate the compliance between standards.
- The application of stringent standards also requires several actions such as technical assistance for the adaptation of farms to hygienic-sanitary standards and the correct use of antibiotics, as well as adequate surveillance and control structures.
- Consequently, some open table discussion should be considered in achieving the standards compliance purpose.

Perspective

- Estimation of a gravity equation → results of the gravity equation can be used in a partial equilibrium model to assess welfare effects that accounts for market failures (Beghin et al. 2012; Disider and Marette 2010).
- Simulate the effect of a ban on pesticides in high toxicity classes on agricultural trade

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