

# ERF Policy Brief

## When Trade Agreements Matter for the Environment in the MENA Region

Inmaculada Martínez-Zarzoso, Thais Núñez-Rocha, and Chahir Zaki

### About the authors

*Inmaculada Martínez-Zarzoso is a professor at the University of Jaume I and the University of Gottingen.*

*Thais Núñez-Rocha is an Assistant Professor at the University of Orléans, Laboratoire d'économie d'Orléans, France.*

*Chahir Zaki is a Chaired Professor of Economics, University of Orléans, Laboratoire d'Economie d'Orléans, and Economic Research Forum.*

### In a nutshell

- *A huge decarbonization effort is required to avoid serious consequences of climate change.*
- *The objective of this policy brief is to analyze the extent to which international trade is affected by environmental provisions in trade agreements.*
- *We show how the depth of the trade agreement matters when it comes to environmental provisions. Indeed, we find that legally enforceable provisions can reduce trade in dirty and footloose goods.*

## Making Trade Agreements More Environment Friendly

The link between trade and the environment and the fears of environmental relocation of industries due to lax regulations was first investigated by Grossman and Krueger (1993). While trade flows have contributed to climate deterioration, trade policy can be used to reduce carbon emissions through the environmental provisions that are included in regional trade agreements. Indeed, the last two decades witnessed an increase in the number of environmental provisions included in trade agreements. Yet, the latter are still more concentrated in developed countries than in developing ones (see Figure 1).

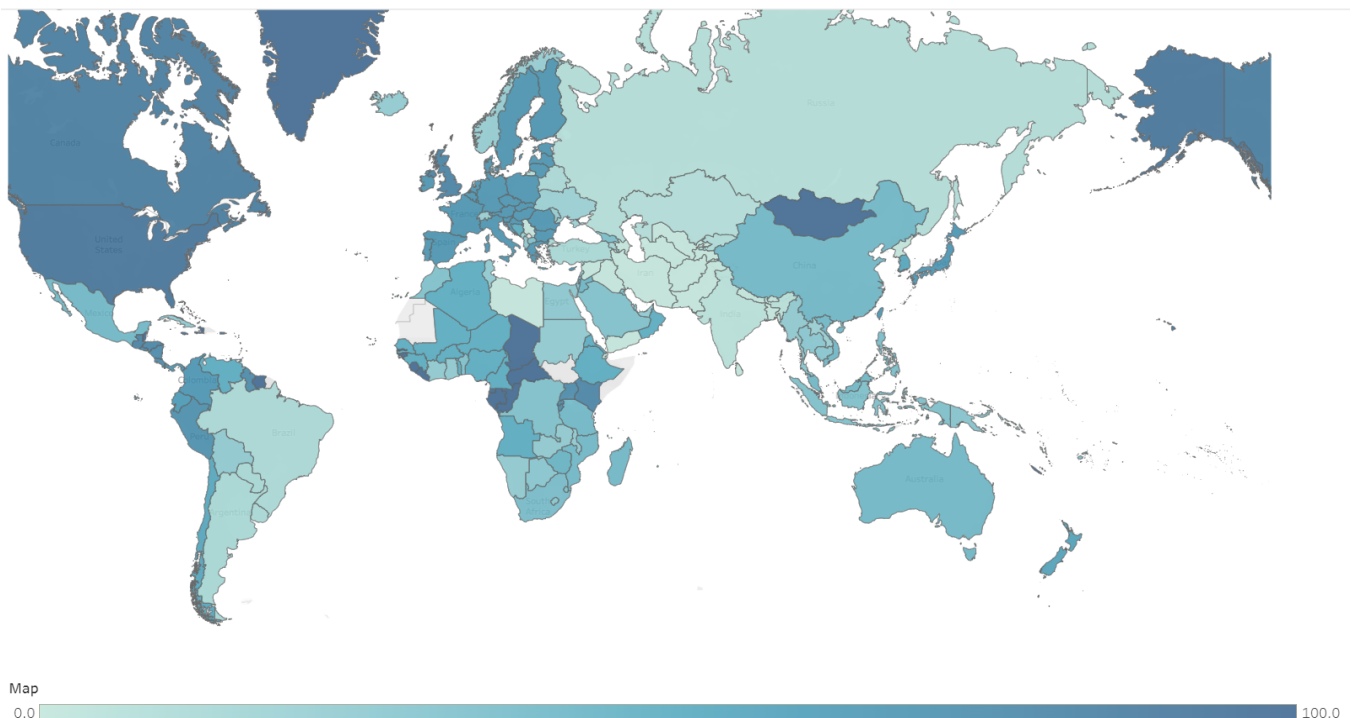
In our analysis, we distinguish between three types of goods: dirty-footloose, dirty-immobile, and normal goods (following Harris et al., 2002; and Martinez-Zarzoso et al., 2017). Dirty-immobile products are those from pollution intensive industries for which incurred pollution abatement and control costs are one percent or more of total costs, such as organic chemicals, inorganic chemicals, non-ferrous metals, petroleum products, fertilizers, and construction materials. Dirty-footloose products are industries defined as for the non-resource-based pollution-intensive industries that use few raw materials and do not need to locate near the sources of raw materials. Finally, we denoted as normal products those that do not belong to any of these categories.

Generally, the existence of a treaty or the enforceability of the environmental provisions can lead to more trade in clean goods. Figure 2 shows that the more stringent environmental provisions the lower value of trade in dirty goods. Indeed, the share of dirty and footloose dirty goods decreases from 11.2% and 9.6% to 9.7 and 8.7% respectively when legally enforceable provisions that are subject to dispute settlement are included in the trade agreement. This is why it is important to consider the level of enforcement.

For the MENA region, Figure 3 shows that a negative association is observed between CO<sub>2</sub> emissions per capita and the number of environment related provisions given that more environmental provisions can lead to cleaner production and trade structure and thus a lower level of emissions. This is for instance verified in the case of Egypt and Jordan that have much lower levels of emissions and more ERP, compared to Qatar or UAE. From a policy perspective, it is important to deepen trade agreements and increase their enforceability in order to mainstream trade policy in environmental policy.

Thus, this preliminary assessment –purely based on stylized facts– shows that including environmental provisions in trade agreements could lead to more trade in cleaner goods and thus lower CO<sub>2</sub> emissions.

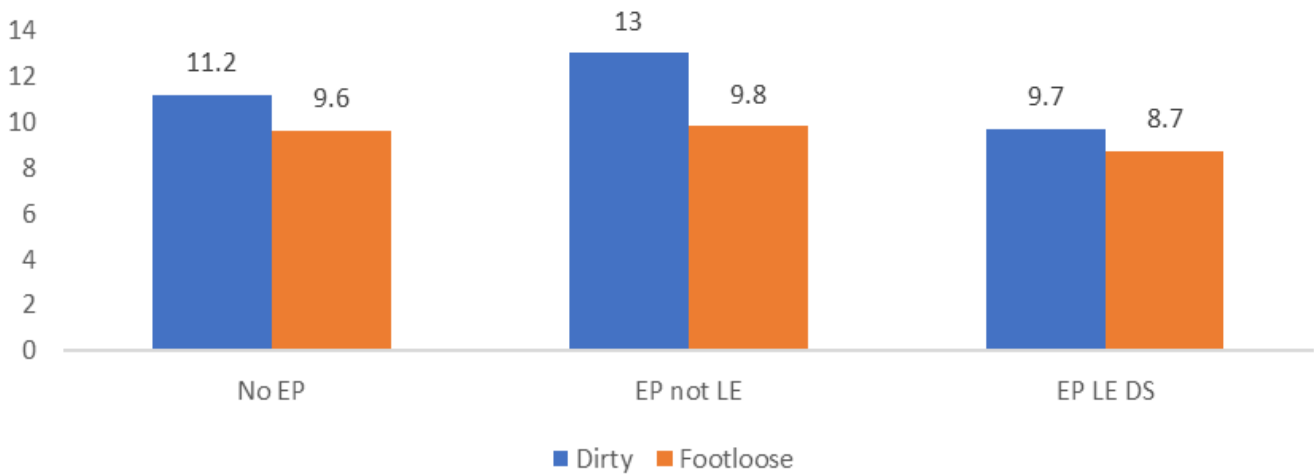
*Figure 1: Share of agreements including environmental provisions*



Source: Deep Trade Agreements dataset (World Bank).

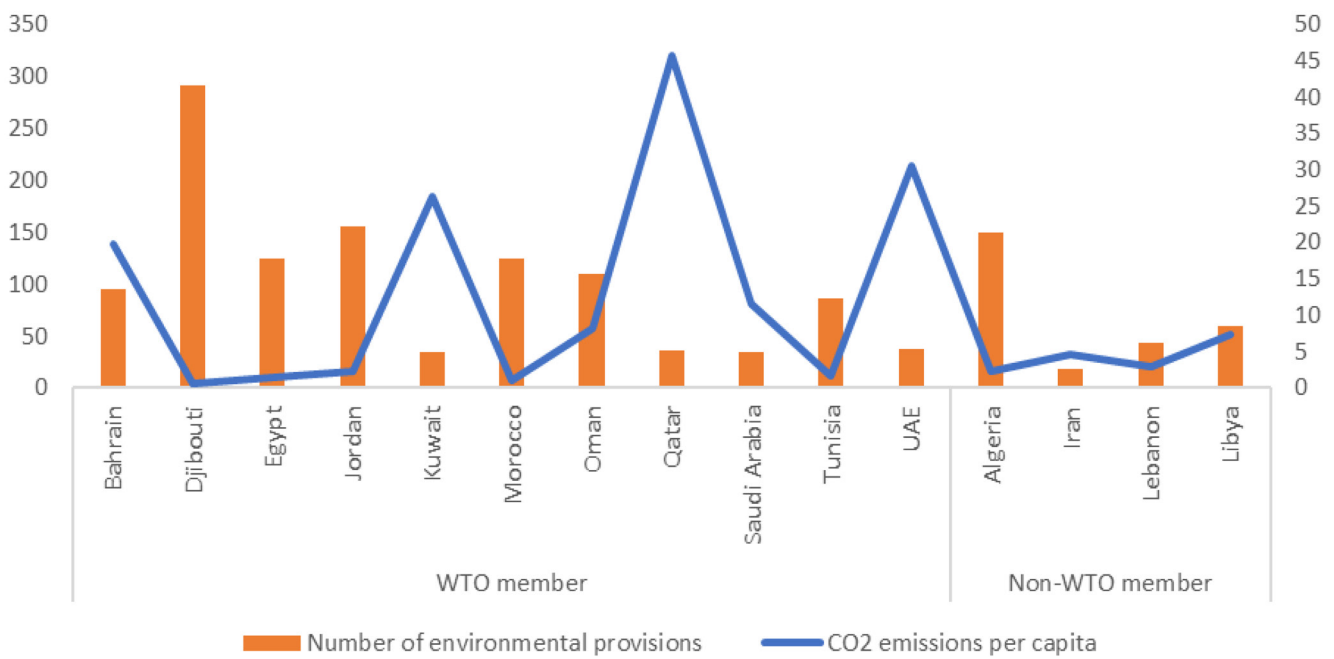


Figure 2: Legally enforceable provisions and type of traded goods (%)



Source: Authors' own elaboration using BACI and Deep Trade Agreement dataset.  
 Notes: EP stands for Environmental Provision, LE legally enforceable and DS for Dispute Settlement.

Figure 3: CO2 emissions per capita and environmental provisions in MENA countries



Source: Hazem et al. (2022) using Trade and Environment Database (TREND) and World Development Indicators (WDI) Database. CO2 emissions are measured in metric tons.



## Methodology and Findings

To quantify the effect of environmental provisions on trade, we estimate a gravity model of trade. We include the depth of the agreement through a categorical variable that takes five values depending on whether there is an agreement or not and increasing values according to the legal bendiness of the provisions. For instance, it takes the value of zero if there is no free trade agreement, one if there is an agreement, two if there are environmental provisions in the agreement, three if these environmental provisions are legally binding, four when those are legally binding and subject to a dispute settlement mechanism. This specification is estimated for different groups of countries and according to the direction of trade to see whether the enforcement of environmental regulations is affected by the development level of trade partners.

The main results indicate that it is important to consider the heterogeneity of the RTA effects on trade by distinguishing by type of good –dirty, footloose and the rest. Doing so, the results show that RTAs with EPs increase trade of non-dirty and non-footloose goods slightly less than RTAs without these provisions by around 5% on average. Differently, in the case of dirty and footloose categories the RTA with EPs reduce trade by 18 and 17%, respectively; with respect to RTAs with EPs for non-dirty and non-footloose goods. When distinguishing by groups of countries and the direction of the export flows, the results show that flows of dirty and footloose goods decrease when RTA have EPs that are legally enforceable and are subject to dispute settlement mainly for flows from non-OECD to OECD.

## The Way Forward

From a policy perspective, this paper highlights a couple of policy relevant findings. First, for developing countries, especially MENA countries, there is still a long way to consider such provisions and to implement them, as most of the treaties and trade agreements with environmental provisions are more concentrated in advanced economies, confirming the Pollution Heaven Hypothesis. Thus, deepening trade agreements to go beyond the simple reduction in tariffs is crucial for the MENA region. Indeed, most the agreements in this region are rather shallow. Including environmental provisions in deeper trade agreements could make the latter in line with the sustainable development goals.

Second, the existence of a law does not necessarily lead to a concrete and tangible effect on trade. This is why while the de jure dimension is necessary, it is not sufficient. Thus, making the laws legally enforceable at the international level and subject to a dispute settlement –the de facto dimension– makes them more effective. These results confirm the role of trade policy in the decarbonization effort to reach the net zero scenario.

## Selected References

- Baghdadi, L., Martínez-Zarzoso, I. and H. Zitouna (2013). “Are RTA Agreements with Environmental Provisions Reducing Emissions?”, *Journal of International Economics*, 90(2), 378-390.
- Brandi, C., Schwab, J., Berger, A. and J.-F. Morin (2020). “Do Environmental Provisions in Trade Agreements Make Exports from Developing Countries Greener?”, *World Development*, 129, 104899.
- Frankel, J.A. and A.K. Rose (2005). “Is Trade Good or Bad for the Environment? Sorting out the Causality”, *Review of Economics and Statistics*, 87(1), 85-91.
- Martínez-Zarzoso, I., Núñez-Rocha, T. and C. Zaki (2024). “Environmental regulations and environmental provisions’ impact on trade”, *Revue d’économie du développement* (forthcoming).





**ERF at a Glance:** *The Economic Research Forum (ERF) is a regional network dedicated to promoting high-quality economic research for sustainable development in the Arab countries, Iran and Turkey. Established in 1993, ERF's core objectives are to build a strong research capacity in the region; to encourage the production of independent, high-quality research; and to disseminate research output to a wide and diverse audience. To achieve these objectives, ERF's portfolio of activities includes managing carefully selected regional research initiatives; providing training and mentoring to junior researchers; and disseminating the research findings through seminars, conferences and a variety of publications. The network is headquartered in Egypt but its affiliates come primarily from different countries in the region.*

#### Contact Information

##### ERF Office

**Address:** 21 Al-Sad Al-Aaly St. Dokki, Giza, Egypt

PO Box 12311

**Tel:** +202 333 18 600 - 603

**Fax:** +202 333 18 604

**Email:** erf@erf.org.eg

**Website:** <http://www.erf.org.eg>

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