

Water Footprint and Mediterranean Diet Adherence -Preliminary Results from **MedDietMenus4Campus**

Prof. Dr. Derya Dikmen
Hacettepe University
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MEDDIET

- MENUS 4 CAMPUS -



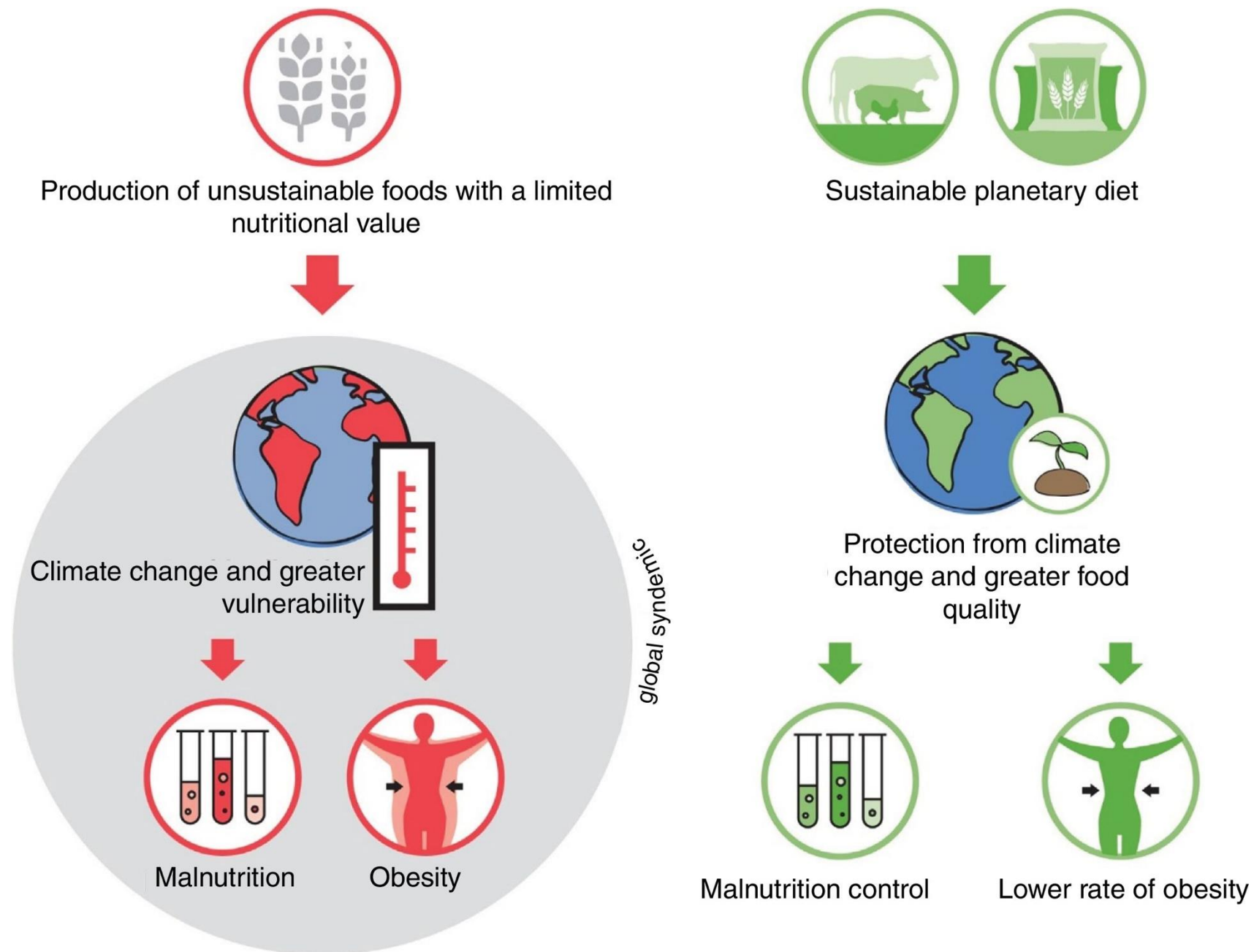
Mediterranean Diet (Med-D)

The Med-D is a traditional eating pattern originating from Mediterranean countries, emphasizing plant-based foods, whole grains, legumes, seafood, and olive oil.



Recognized for its low environmental impact, aligning with sustainable dietary practices by promoting local, seasonal foods with a lower carbon and water footprint.







The aim of this study was to evaluate the environmental impacts of higher education institutions' (HEIs) menus through the assessment of their water footprint and to examine their compliance with the Mediterranean Diet (MedD) in Croatia, Portugal, and Turkey.



Water Footprint Calculation

- The water footprint values for each food item on the menu were determined using the study by Mekonnen and Hoekstra. Their research was based on the guidelines provided by the Water Footprint Network. In our calculations, the water footprint (WF) consists of all water consumed throughout its various production stages, excluding additional water needed for cooking.



Water Footprint Calculation

- Additionally, water footprint factors for salt, parsley, tarhana, leek, bulgur, thyme, sumac, vinegar, vermicelli, mushroom, pomegranate, pine nuts, pepper paste, powdered sugar, baking soda, vine leaves, and phyllo dough were also unavailable and therefore not included in the calculations.



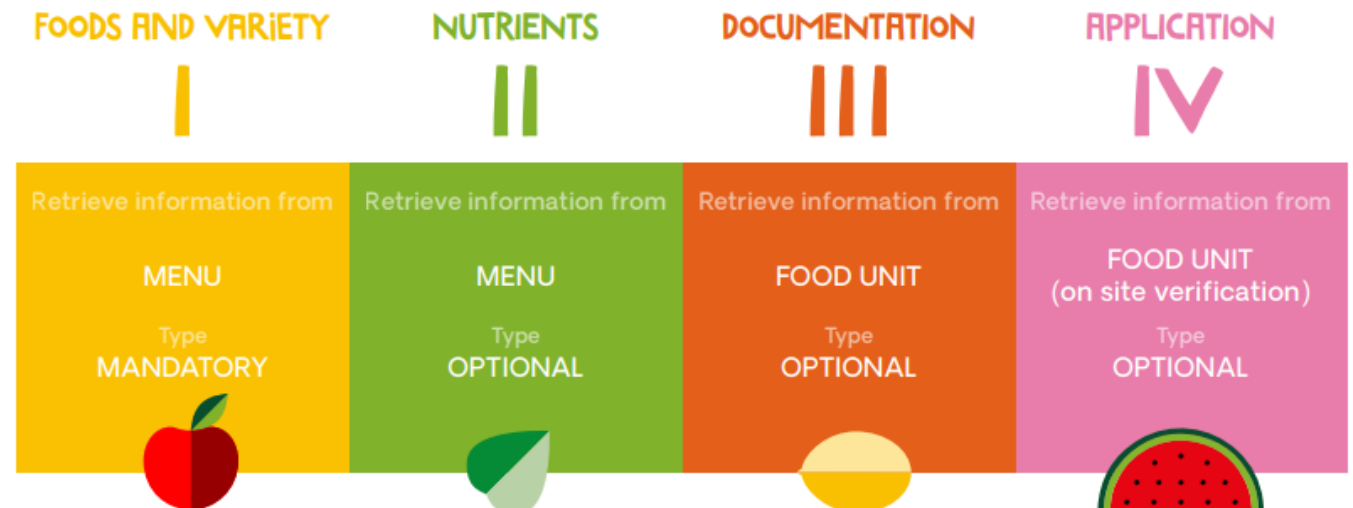
Med-D adherence was assessed by Med-Diet Compliance (MeDCIn)

- Two-week menus from two distinct HEIs in each country were selected and evaluated.
- 5-day/week and 1-meal/day menu.

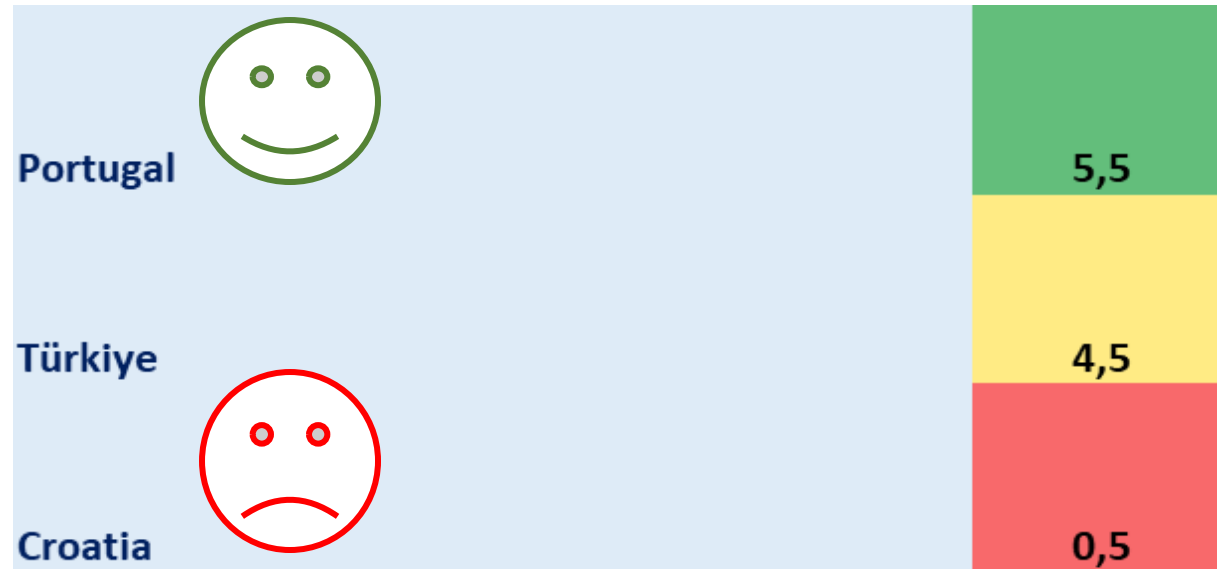


INDEX TO EVALUATE MENU COMPLIANCE WITH THE MEDITERRANEAN DIET

This index is organised in **4 dimensions**:

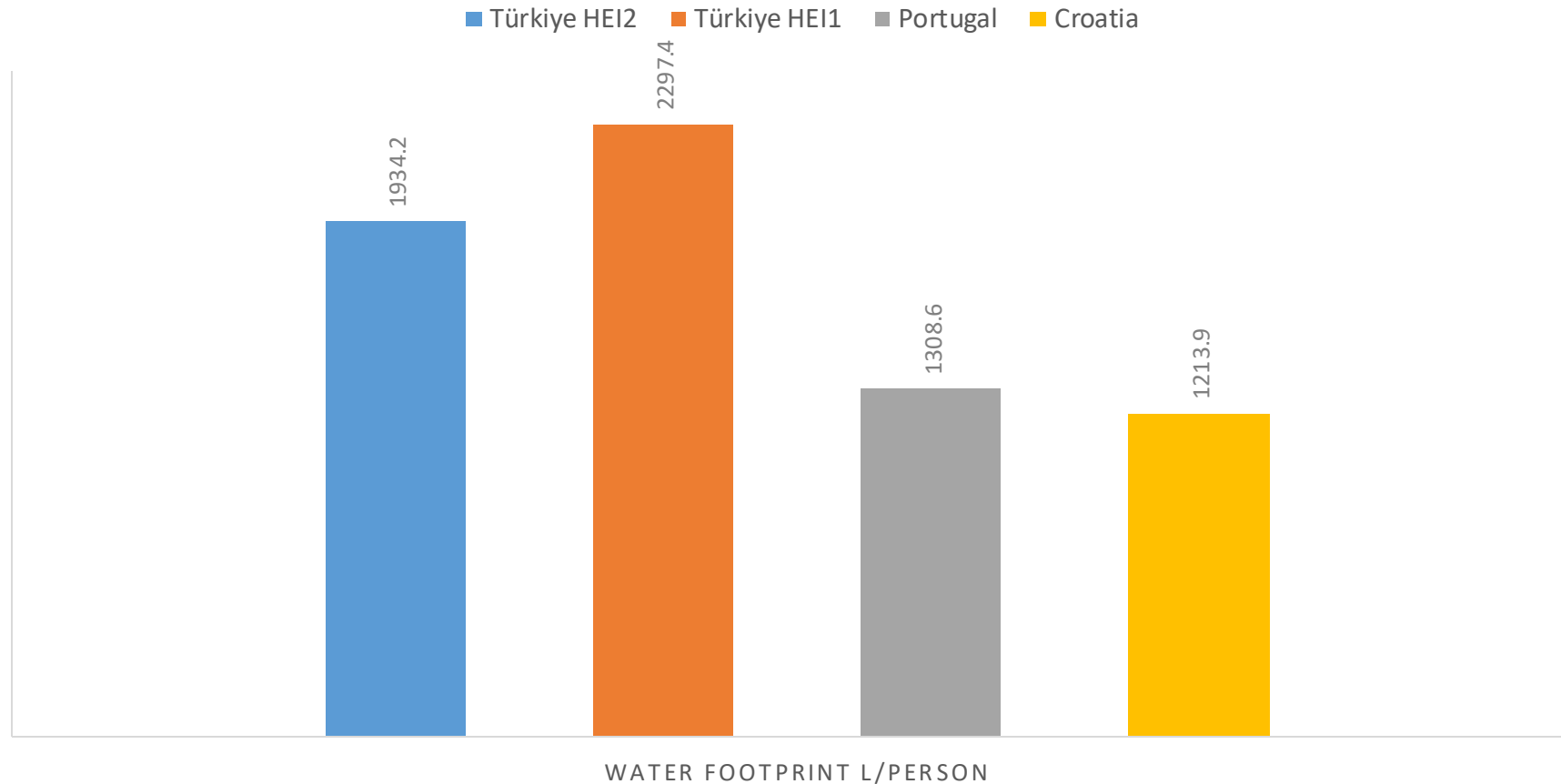


MedDiet index scores



MedDiet index scores ranged from 0.50 to 5.50. Portugal University 1 (5.5) and 2 (4.5) scored the highest, whereas Croatia University 1 (0.5) scored the lowest.

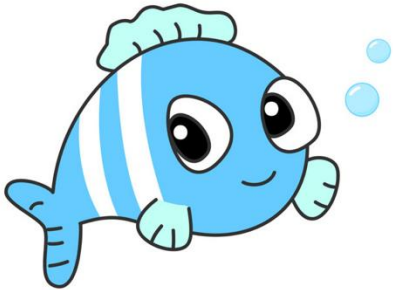
Water Footprint in HEI Menus Across Turkey, Croatia, and Portugal



Mean water footprints varied across three countries (1213.9-2297.4 L/person). Turkish HEI 1 (2297.4 L/person) and 2 (1934.2 L/person) exhibited the highest water footprints, while Croatian HEI 2 (1213.9 L/person) and Portugal HEI 2 (1308.6 L/person) had the lowest.



Portugal's Results: Lower water footprint, high Med-D adherence potentially due to high seafood use.



Turkey's Results: High water footprint attributed to balanced servings of vegetables, fruits and high portions of red meat.



Croatia's Results: The low Med-D adherence can be attributed to insufficient fresh fruits, whole grains and pulses.



Implications and Future Research

- This study highlights the low adherence of HEI menus to the Mediterranean Diet (MD) across Croatia, Portugal, and Turkey, stressing the need for menu modifications to improve university food services
- These findings emphasize the potential for cultural exchange and the sharing of best practices to enhance the nutritional quality and sustainability of HEI cafeteria menus, serving as a baseline for future, targeted interventions.



Conclusions

- This study reveals valuable insights about the adherence of the menus from the different HEIs included and their associated environmental impacts. The consistently low compliance across the three countries emphasizes the importance of introducing changes on the menus to improve university food services.

Conclusions

- The visible variations between countries underscores the importance of tailored interventions that consider culinary traditions, gastronomy practices, food availability and cultural preferences. The water footprint calculations provide important data on the environmental impact of the menus provided.
- We hope these findings serve as a valuable baseline to develop targeted strategies to enhance the nutritional quality and sustainability of HEI cafeteria menus in all the countries.



- **Take-Home Message**

University menus across Croatia, Portugal, and Türkiye show low adherence to the Mediterranean Diet, highlighting the need for menu improvements that promote both better nutrition and environmental sustainability.



THANK YOU



DERYA DIKMEN



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