GLOBAL FOOD SUPPLY CHAINS CONNECTING NORTH AND SOUTH

As food consumption is pivotal in sustainable development, this section aims at giving points of discussion around the unsustainability of some food consumption behaviors. In particular, the idea is to show how a popular and trendy food, often consumed by younger generations, can have a strong impact because of the global food supply chain of the ingredients that make it up. Although each ingredient can have impacts related to society, economy and the environment, in this section only the environmental impact will be analyzed.

A BOWL OF POKE

The food supply chains of our globalized world, in addition to increasingly linking trade between the North and South of the World, imply enormous impacts from the point of view of the environment (reduction in biodiversity, alteration of natural ecosystems), society (labor exploitation, lack of food sovereignty) and economy (growing inequality). Before food reaches our plates, it travels guite a few kilometers and exchanges a few hands to get to us. Finding ways to manage and reduce our footprint in all of these steps of the food production process is vital to ensure a more sustainable future.

The critical elements that characterize a large part of globalized supply chains and determine the diets of Europeans, could potentially coexist in one dish: for example a **bowl of Poke**.

The Poke, in its western interpretation of the Hawaiian recipe, is one of the most trending dishes of the period in major European cities and can be a very useful example of a dish to highlight and represent the extent of some of the mentioned impacts of North-South food supply chains. The dish is composed of several parts: base, protein, marinade, topping, crunchy and sauce. In general its main ingredient is sliced raw fish (Poke is a Hawaiian verb meaning to cut, to slice), served in a rice bowl and seasoned with many other elements: dried fruit (macadamia nuts, cashews), vegetables (spring onions, cherry tomatoes, cabbage, seaweed), fruit (avocado, pineapple, mango, lime), sauces and more (ginger, herbs, soy sprouts).

It has that sense of discovery for tropical style. It is highly customisable because it allows you to choose the composition according to your taste. It looks healthy, is colorful and beautiful to look at. What's more, it follows the dietary trend of the moment: few carbohydrates and lots of protein.

WHY IS IT SO TRENDY?

BUT IS POKE SUSTAINABLE?

Probably the best answer to this question is: it could be, but in most cases it is not. It could be because it all depends on the characteristics of the supply chain of each product that makes up the rich dish. Since there are no internationally recognized sustainability standards for all products, ingredients such as those mentioned above often have a very long and fragmented supply chain. This means that the processing of products can be numerous and carried out in different countries or continents, resulting in long and repeated transport distances. In addition, the geo-economic difference of the countries involved in trade relations, especially North-South relations, often leaves room for the violation of certain rights, such as labor rights or access to water.

HOW FOOD GETS INTO YOUR PLATE

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Environmental impact **CF** 3,68 (CO₂eq/kg)

815



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The water footprint (WF) measures the amount of water used to produce a good or a service that we use. More on: Aldaya, M. M., Chapagain, A. K., Hoekstra, A. Y., & Mekonnen, M. M. (2012). The water footprint assessment manual: Setting the global standard. Routledge.

The infographic aims to explain the global production and trade chains of fresh tuna, avocado, rice and cashew nuts. It does so by geolocating their main export and import locations, showing how complex food supply chains are. Could you imagine that all of this complexity lies in your poke bowl?



All references about environmental impacts are from Petersson, T., Secondi, L.,

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Magnani, A., Antonelli, M., Dembska, K., Valentini, R., ... & Castaldi, S. (2021). A multilevel carbon and water footprint dataset of food commodities. Scientific Data, 8(1), 1-12.

All references about import and export countries are from **TRIGDE database**, available at: https://www.tridge.com/ and OEC world database: https:// oec.world/en



RICE

impact

CF 2,19

(CO₂eq/kg)

WF 1597

(Water/L)

Environmental

Environmental impact **CF** 1,38 (CO₂eq/kg) **WF** 14218 (Water/L)



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91



ALTERNATIVE POKE

Faced with the awareness of the complexity and often unsustainability of the supply chains, consumers can contribute through their own choices and play their part. How? First seeking information on the certification of the supply chain to ensure that the food they buy is socially and environmentally sustainable. European citizens, especially the younger generation, are demanding sustainable food supply chains that guarantee food safety and health, and support growth, employment and labor rights in the food chain. It is by understanding the complexity of the food system that it becomes possible to search for strategies to correct its criticalities. Another solution is selecting more sustainable food, trying to compose an **alternative** Poke. If instead of the classic ingredients, your poke could include a vegetable protein such as legumes, more sustainable fish and less impacting vegetables, nuts and cereals, it would already be a step towards sustainability.

When looking at Carbon and Water Footprint, the alternative pokè impacts 52% less than the normal pokè!







TOTAL 11,71 CO,eq/kg 18223 water/L

6,09 CO,eq/kg 9419 water/L