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Food systems governance should be preceded by food systems diplomacy

The practice by which international actors consider and respond to negotiations that influence the food system – food systems diplomacy - has the potential to reframe the global food governance narrative to balance the health, social, environmental and economic domains of food systems

Governance decisions in food systems often prioritize the economic domain - specifically commercial interests and enterprise (Kickbusch and Allen 2016). While it is widely accepted that the challenges of our global food system feature interconnections between multiple domains, the prioritization of commercial interests often happens at the expense of environmental, social, and population health goals. Environmental challenges include biodiversity loss, ecosystems polluted by chemical runoff and fertilizers, and a multitude of devastating impacts related to climate change (Bene et al. 2018). Economic challenges include market volatility that affects producers, low wages for workers throughout the food system, and the relative unaffordability of healthy foods—for example, nutrient-rich, non-staple foods are several times more expensive than staples (Headey and Alderman 2019). Social issues include poor working conditions, a lack of rights for farm workers, and high rates of food insecurity and malnutrition despite food abundance (FAO 2021, Herforth 2020).. Population health issues within the realm of food systems include food insecurity, undernutrition, micronutrient deficiencies, diet-related chronic diseases, and the safety and health of laborers on farms and throughout food supply chains (HLPE 2020)—issues that also have disproportionate impacts among socially disadvantaged groups.

Diplomacy precedes governance, and we argue that food systems diplomacy has the potential to recalibrate global food governance to better, more equitably, serve the four interconnected domains of sustainable food systems. "Diplomacy is about persuasion, not coercion. It is about looking for and finding common ground, about forging agreements and achieving a balance of benefits that will allow each party to go home with at least some degree of satisfaction" (Fréchette via Cooper et al. 2013). Traditionally, diplomacy was only assumed to take place between state actors; more recently, the definition of diplomacy may extend to actors beyond states (Cooper et al. 2013), and this evolution is of particular importance to food systems given the potential influence of non-state actors such as transnational corporations (TNCs).

Lessons from recent history

Events in recent history illustrate the interconnections between these domains and the prioritization of commercial interests over environmental, social, and population health goals. These examples highlight the impact of historic deficits in food systems diplomacy

The Arab Spring was a revolutionary period of anti-government protests in the early 2010s exacerbated by a food crisis influenced by climate change. In the years before the crisis, much of the Middle East and North Africa relied on imports for more than 50% of their food (Sternberg 2012). As a result, this vast and diverse region has been highly susceptible to volatility in global food prices. Between 2008 and 2010, food prices increased by 40% in Egypt (Sternberg 2012), contributing to growing rates of food insecurity within this population. One of the driving forces behind the drastic increase in food prices was simultaneous crop production failures due to climate change related weather events in staple crop growing countries, namely China and Russia, that were exporting their grain to the Middle East (Perez 2013). Russia and China could not uphold their ends of a trade agreement with the Middle East because of low yields. In the example of the Arab Spring, the connection between the climate crisis, food systems, and political events is apparent.

Uncertainty about food supply and prices can trigger unrest on a scale that requires diplomatic action. Yet, could preventative diplomatic actions have altered the course of events in a way that attenuated some of the negative impacts on food systems?

If diplomatic actors had incorporated systematic assessments to evaluate the outcomes and unintended consequences of the draft trade agreement beyond the economic domain, the outcomes could have been different. In doing so, states could have considered the trade-offs between different domains of sustainable food systems, and subsequently predicted the effects of volatile weather on staple crop yields and the ensuing impacts on food insecurity.

The re-negotiation of the North American Free Trade Agreement (NAFTA) to the United States - Mexico-Canada Agreement (USMCA) in 2018 began in an effort to return manufacturing jobs back to the United States (US) to jumpstart wage growth, and, in general, implement the Trump Administration's aggressive tariff strategy (Labonte et al. 2019). Although jobs and wages were the focus, re-negotiating NAFTA provided an opening for American soft-drink and food corporations to place pressure on the US government to add a clause to prevent front of package warning labels on high sugar and high fat foods in Mexico and Canada (Labonte et al. 2019, Crosbie et al. 2020). This example illustrates, that negotiations that begin for political reasons have terms that affect food environments and human nutrition, and that transnational corporation economic interests can be so powerful that they shape food system outcomes in specific regions.

The Coca-Cola Corporation, headquartered in the US, has faced serious backlash for its water usage in LMICs. One such area is the state of Rajasthan in India. Rajasthan has historically experienced natural drought due to its arid regional location; in recent times drought has been, and continues to be, exacerbated by climate change (IPCC 2022, Bokil 2000). Coca-Cola set up bottling facilities in Rajasthan and overused limited water resources in the area (Goyal and Linthoingambi 2009). In this case, a TNC directly influenced public health and access to natural resources of a population. While Coca-Cola continues to face scrutiny on this, it is unclear if positive food system changes have resulted (Kamani 2014).

In 1985, the World Health Organization (WHO) was catalysed by the inappropriate use of diluted infant formula to set internationally recognized standards on the marketing of breast milk substitutes (Post 1985). Despite over three decades of the Codex, a set of internationally accepted food standards organized by the Food and Agriculture Organization (FAO), and restrictions on the marketing of commercial milk substitutes, LMICs that enforce the code can face retaliatory behaviors from countries that export large quantities of commercial milk substitutes (Russ et al. 2021). This example confirms that despite having global standards, the economic power of TNCs, augmented by the soft power of some countries, can obviate global food-health standards.

The above examples illustrate the interconnectedness but unbalanced prioritisation of environmental, economic, social, and population health issues in the global food system, and demonstrate how powerful actors can sway a country's political

. As Bene (2022) argues, what is needed to transform the system is political will and an approach that can realign the actions of a large number of different actors and tackle a number of processes together in a "normative, global, and prescriptive manner at both national and international levels" (page 11).

Applying food systems diplomacy

Diplomacy between nations and influential actors is an important entry point for re-calibrating food systems governance. We consider modifying food systems ideas, inspiration, and motives at the diplomatic-level as an upstream intervention with downstream benefits for environmental, economic, social, and population health goals. No cohesive framework yet exists to examine how diplomatic relations can promote the multiple, interconnected domains of food systems.

We offer a framework (Table 1) to consider the multiple domains of food systems holistically when applying diplomacy instruments. Diplomatic goals within each of the four domains of sustainable food systems from the United Nations (UN) FAO are categorized on the basis of four key dimensions: quantity, quality, distribution, and resilience. These four evaluative criteria build on the Institute of Medicine's *Framework for Assessing Effects of the Food System* whereby "quantity, quality, distribution, and resilience measure how much

the food system provides, where and to whom it goes, and how sustainably it can do so" (Institute of Medicine and National Research Council 2015).

The framework applied in Table 1 to two diplomatic settings, "state-to-state" and "multilateral." State-to-state(s) diplomacy occurs between two or more states—for example, relating to military aid, trade agreements, sanctions, and intelligence (Cooper et al. 2013). Pertinent to food systems here are the movement of goods, actions to prevent food crises (including food aid), and influencing other governments' public health or agriculture policy. In Table 1 we focus on free trade agreements, specifically the Panama-United States Trade Promotion Agreement (Pan.-U.S. 2007), US-Singapore Free Trade Agreement (Sin.-US 2004), and the Jordan-United States Free Trade Agreement (Jor.-U.S. 2001). These agreements were reviewed for specific keywords, evaluated as a whole, and assessed within their historical. Trade agreements allow us to understand publicly visible and documented actions taken by governments that have direct and indirect influence on the food system. The second diplomatic context we consider occurs between multilateral actors; for example, summits and conferences convened by UN agencies such as the FAO and WHO (Cooper et al. 2013), attended by member states as well as a range of civil society, private sector, and academic organizations. Food systems topics of importance in this context include hunger, malnutrition, food insecurity, the impact of climate change, and the future of sustainable food systems. Table 1 provides examples of diplomatic goals in the context of the United Nations Food Systems Summit (UNFSS). In 2021, 143 UN member states convened over important food systems topics, many of which were related to the diplomatic goals in Table 1. The UNFSS received criticism for not adequately including voices of people and civil societies (Canfield et al. 2021). It is worth noting that though we are treating the UNFSS as a diplomatic event, the UN has no enforcing authority. Though the UNFSS does not guarantee change within participating countries, it is an important example of *how* multilateral agencies can facilitate diplomatic meetings and garner influence

Table 1. Food Systems Diplomacy Framework

Food system domains	Food Systems Diplomacy goals, with key dimensions (quantity, quality, distribution, resilience ¹ [ok? remove footnote and include the paper's reference]) for each domain	State-to-State(s) diplomacy, with a focus on trade [ok? remove footnote]	Multilateral diplomacy, with a focus on the United Nations Food Systems Summit (UNFSS)
Population health: including diet quality, nutritional status, and human health (including non-communicable and communicable diseases and occupational health).	(Goal #1) Ensure there is enough food (Quantity) (Goal #2) Prioritize safe, nutritious food (Quality) (Goal #3) Ensure that all people can access and utilize these foods in ways that lead to improved nutritional status and health (Distribution) (Goal #4) Promote policies and infrastructure that support nutritious diets for future generations (Quality, Resilience) (Goal #5) Consider occupational health (the health of farmworkers, restaurant workers, and other laborers) (Distribution, Resilience)	- The Singapore Free Trade Agreement [ok? here, insert reference] describes the importance of prioritizing public health over trade agreements (Goal #4), but there is no specific language on whether there is enough food (Goal #1), food quality (Goal #2), food access (Goal #3), or nutritious diets for future generations (Goals #4). - Some trade agreements [ok? can you insert examples with references] mention sanitary and phytosanitary measures, with a goal of meeting food safety guidelines from the Codex (Goal #2) while not hindering trade. - In the Panama Trade Promotion Agreement [ok? insert reference] there is language addressing protecting the environment (see 'Environmental Domain'); however, it is clearly stated that these articles do <i>not</i> extend to worker safety or health (Goal #5). - The Jordan FTA [ok? insert references] contains language on labor, yet Jordan's labor practices, continue to come into question² (Goal #5)	- The UNFSS featured prominent discussions of Goals #1-4, but received criticism for their lack of efforts to prioritize the voices of those affected by Goal #5³. [ok? reference as in main text and in the final reference list rather than as a footnote]
Social: including social equity (e.g., safe and fair working conditions for laborers), cultural practices, and the religious and cultural appropriateness of food.	(Goal #6) Prioritize social equity outcomes for vulnerable groups including women, farm workers and other laborers, resource-constrained households, and communities susceptible to climate change or agricultural/environmental exposures (Distribution, Resilience) (Goal #7) Promote the production of and access to culturally appropriate foods (Quantity, Quality) (Goal #8) Uphold dignity and minimize harm to cultural practices related to food (Quality, Resilience)	- In the Panama Trade Promotion Agreement, a side letter acknowledges the importance of traditional knowledge and folklore in the context of Intellectual Property matters⁴ [ok? here can you remove the footnote and place a reference inf]. (Goals #7-8).	- Despite the UNFSS positioning itself as a "people's summit," it was met with significant criticism that the voices of less powerful groups were not adequately heard⁵ (Goal #6). [ok? same point about footnote removal and including references on the Table but also in the reference list of the main file] - It is unclear if there were appropriate efforts within the UNFSS to prioritize culturally appropriate food practices and prevent and minimize harm to cultural practices related to food (Goals #7-8).
Environmental: including relationships between food systems and environmental changes (such as climate change), and externalities associated with food production, processing, distribution, and waste.	(Goal #9) Promote diets with low environmental impact (Quantity) (Goal #10) Protect and restore the environment and its natural resources including soil, water, air, forests, wildlife, and energy (Quantity, Quality) (Goal #11) Mitigate and reverse climate change (Quantity, Quality, Resilience) (Goal #12) Build ecological resilience to disruptions that may impact food systems (Resilience)	- Each of the three free trade agreements include some language on the importance of protecting the environment (Goals #10). The most mentions of the word "environment" are in the Panama Trade Promotion Agreement [ok? ref] and the least in the Jordan Free Trade Agreement [ok? ref]. - The Singapore Free Trade [ok? ref] Agreement is the only document to mention climate (Goal #11), and it does so only once.	- The UNFSS processes resulted in several "Solution Clusters" addressing Goals #9-12 such as <i>Food Is Never Waste, Halving Food Loss and Waste by 2030; Transformation Through Agroecology and Regenerative Agriculture; and Climate Adaptation, Mitigation, and Resilience</i>.⁶ [ok? reference, note footnote]
Economic: including affordability of food for consumers, and the economic viability of food production and other food systems livelihoods.	(Goal #13) Leverage the global movement of foods in ways that build wealth for all nations (Quantity, Quality, Distribution) (Goal #14) Identify areas where food systems change can contribute to long-term economic growth (Quality, Resilience) (Goal #15) Foster economic resilience, especially for developing economies (Distribution, Resilience)	- The vast majority of language in the three trade agreements centers economic goals related to investments, profits, movement of goods, and protecting free trade (Goal #13).	- The UNFSS was criticized for prioritizing the values and interests of TNCs.⁷ (Goals #13-15) [ok? reference, note footnote]

¹ Domains and dimensions sourced from Institute of Medicine's Framework for Assessing Effects of the Food System

² Jordan Free Trade Agreement. United States Trade Representative. (n.d.). Retrieved July 13, 2022, from <https://ustr.gov/trade-agreements/free-trade-agreements/jordan-fta>

³ Canfield et al. 2021. *UN Food Systems Summit 2021: Dismantling Democracy and Resetting Corporate Control of Food Systems*. <https://doi.org/10.3389/fsufs.2021.661552>

⁴ Letter on Traditional Knowledge. (2007). Asset_upload_file608_10510.pdf. (n.d.). Retrieved February 9, 2022, from https://ustr.gov/sites/default/files/uploads/agreements/fta/panama/asset_upload_file608_10510.pdf

⁵ Canfield et al. 2021. *UN Food Systems Summit 2021: Dismantling Democracy and Resetting Corporate Control of Food Systems*. <https://doi.org/10.3389/fsufs.2021.661552>

⁶ UN Food Systems Solution Clusters. 2019. <https://foodsystems.community/game-changing-propositions-solution-clusters/>

⁷ Clapp et al. 2021. *The Food Systems Summit's Failure to Address Corporate Power*. <https://doi.org/10.1057/s41301-021-00303-2> [ok? please note that all references here should be removed as footnotes, and the references should be included on the table and remain in numeric order with the rest of the manuscript]

The Food Systems Diplomacy framework can be used to interpret and contextualize previous diplomatic negotiations. Table 1 provides illustrative examples of past actions and decisions, highlighting different ways that diplomatic events influenced food systems outcomes across multiple domains. Food Systems Diplomacy ultimately provides a lens through which to consider food systems more holistically and assess the extent to which population health, social, and environmental domains are influenced, both positively and negatively. In studying the UNFSS, for example, we find that the social domain is often ignored.

Though this Comment represents an academic analysis, the Food Systems Diplomacy framework can be used by practitioners to assess prospective diplomatic negotiations through the lens of sustainable food systems, ensuring that all domains are considered. Food Systems Diplomacy could help redistribute burdens and benefits by enabling transparency around the multiple societal goals considered in high-level decisions. For example, less powerful nations could be relieved of disproportionate responsibility for ensuring social equity, mitigating climate change, securing farmworker rights, and ending malnutrition.

One could argue that if the purpose of trade agreements is to champion free markets, promote globalization, and improve the economies of the parties involved, it is unreasonable to expect diplomatic relationships to go beyond economic considerations. In many cases, valuing environmental, social, and population health outcomes may ultimately support economic outcomes if we consider externalized and unevenly distributed costs (Institute of Medicine and National Research Council 2015). Prioritizing short-term economic gains at the exclusion of investing in the multiple domains of food systems can result in greater costs to the system in the long-term (IPCC 2022). And, there are other reasons our model of diplomacy that consider multiple societal goals beyond economics. Negotiations between countries are mired in existing inequalities. The power differences between countries like the US and LMICs, for example, typically do not result in equitable outcomes (United Nations 2006). Furthermore, many non-economic societal goals have value in and of themselves (United Nations 2006); meeting the human right to food does not need to be profitable. Within the environmental, social, and population health domains, food may be considered a public good for current and future generations [ok? reference?]. The sixth assessment report from the Intergovernmental Panel on Climate Change included a discussion on “sustainable degrowth,” noting that, while growth in GDP is often seen as the sole metric of a country’s success, in a climate resilient world we may need to embrace other metrics of success, such as well-being (IPCC 2022).

Beyond trade, the Food Systems Diplomacy framework can be used to assess and consider initiatives from multilateral agencies such as the UN’s Sustainable Development Goals (SDGs). The SDGs, approved by all UN member states, are the blueprint for UN efforts to advance sustainability (United Nations 2015). Sustainable food systems have been identified as critical to achieve progress across all interlinked 17 SDGs. Given that the SDGs have high political priority, this also lends weight to the importance of food systems as a priority within diplomacy, governance, and politics. Food Systems Diplomacy can be used to understand current and future food systems opportunities and challenges to advancing the SDGs.

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