

Autor: Marc Lewald

Course of Studies: GGTF, Global Governance and Transformation

Institution: Karlshochschule International University

Professor(s): Prof. Dr. Anthony Teitler

25. Januar 2023

How Does Globalization Impact World Hunger And How Could Technology Be Leveraged To Address That?



Table of Content:

How does globalization impact world hunger and how could technology be leveraged to address that?	1
1. Tackling World Hunger in the Era of Globalization	3
2. Connecting the World, But Leaving Hunger Behind	4
2.1 Global Governance	4
2.2 Globalization	5
2.3 Global Hunger	6
3. Leveraging Technology to Address the Consequences of World Hunger	7
4. Conclusion	8
5. Bibliography	9

1. Tackling World Hunger in the Era of Globalization

We are living in very difficult times and many people on this earth have a much harder time than others. In order to counteract this inequality and to secure peace and harmony in the world, the SDGs - Sustainable Development Goals (United Nations, Department of Economic and Social Affairs, 2023) were adopted and approved by all members of the UN in 2015. Goal 2 of the SDGs, aims to "end hunger, achieve food security, improve nutrition and promote sustainable agriculture." (United Nations, Department of Economic and Social Affairs, 2023, Goal 2).

Because in 2021, "768 million people worldwide were considered undernourished. This represented about 10 per cent of the world's population, with 91 per cent of the people living in Asia and Africa." (Destatis, 2022, Unterernährung).

One strong factor in the development of this issue is globalization, an often elusive concept. What is relatively clear, however, is its profound impact on the global food system. Whereby it can be strongly debated whether these influences are positive and the globalization will "lead to the end of world hunger" (Vanham, 2019) or negative and the globalization already left millions of people hungry (Letters, 2022).

Global issues like that with international implications require special guidance like e.g. in the form of global governance. This "encompasses the totality of institutions, policies, norms, procedures and initiatives through which States and their citizens try to bring more predictability, stability and order to their responses to transnational challenges." (Committee for Development Theory, 2014, Summary). In this specific case to tackle the problem of world hunger.

In addressing the issue of global hunger there is also one other factor, that could play a key role, technology (Braun, 2010). By harnessing technological advances, one can improve the effectiveness and efficiency of food systems and increase transparency, security and accountability in all areas interlinked with global hunger like politics, economics, logistics, etc. Digital platforms e.g., can be used to track and monitor food production, distribution, and consumption, providing valuable data for companies, policymakers and other stakeholders to make informed decisions. (WFP I, 2023)

So while globalization has brought many benefits to the global food system, it has also created a number of challenges that need to be addressed. Through a form of global governance and the help of technology, it may be possible to face some of these challenges and ensure that everyone has access to the food they need to lead healthy and productive lives.

2. Connecting the World, But Leaving Hunger Behind

2.1 Global Governance

Lets start with the global governance, which should not be confused with a global government (Finkelstein, 1995). It's rather "an international framework of principles, rules and laws including a set of institutions to maintain them, which are necessary to deal with global problems" (BpB, 2023, Centre for the Study of Global Governance) and is therefore necessary to deal with global problems such as in this case global hunger.

Because despite the existence of various international organizations, such as the United Nations Food and Agriculture Organization (FAO, 2023), the UN World Food Program (WFP II, 2023), the International Fund for Agricultural Development (IFAD, 2023), the United Nations Children's Fund (UNICEF, 2023), or the World Health Organization (WHO, 2023) that are tasked with addressing food security issues, there seems to be a lack of clear and effective coordination among these organizations, as well as between these organizations and national governments. Because even if a joint effort made it possible to reduce the number of undernourished people from over 800 million in 2005 to under 600 million until 2018, are the numbers in 2022 back at over 800 million (Buchholz, 2022).

Another challenge of global governance in relation to global hunger is the lack of political will among some actors. Despite the scale of the problem, some governments and other actors may be unwilling to invest the necessary resources or take the necessary actions to address global hunger (Bratspies, 2014). This can be due to a lack of understanding of the issue, or a lack of political or economic incentives to take action, or even simply because of a lack of resources.

The absence of a human rights-based approach (Ghimire, 2013; Mowbray, 2007) represents another problem to global governance in addressing world hunger. Addressing global hunger requires recognizing the right to food as a fundamental human right, and ensuring that food security policies are inclusive, equitable and respect human rights. Despite the adoption of the Universal Declaration on the Eradication of Hunger and Malnutrition (OHCHR, 1974), in 1974 and the fact that the idea of eradicating hunger is over a century old, the world has not been successful in stopping hunger (United Nation News, 2022).

In order to address these challenges, it is essential that global governance mechanisms are strengthened and made more effective in addressing global hunger. The issue of global hunger is closely linked to global governance, and addressing this issue requires a comprehensive and coordinated approach at the global level. Another aspect with which global hunger and global governance are strongly linked is the process of globalization, which for some might be one of the driving forces behind the combat against global hunger (Vanham, 2019).

2.2 Globalization

Globalization is a term that has been used in a variety of ways, but is generally understood to refer to “the growing interdependence of the world’s economies, cultures, and populations, brought about by cross-border trade in goods and services, technology, and flows of investment, people, and information” (PIIE, 2022, Introduction).

Even though globalization has become a normal conceptualization for many people, the concept or phenomena behind globalization remains highly controversial. Many people stick to the definition of McGrew (and his colleagues) as its a comprehensive definition that mostly includes all factors of globalization, be it technical, societal or economic factors.

They describes globalization as a: „process (or set of processes) that embodies a transformation in the spatial organization of social relations and transactions, generating transcontinental or interregional flows and networks of activity, interaction, and power“ (Held et al., 1999, Introduction).

The history of globalization can be traced back hundred of years, with the development of trade networks and the movement of people and goods across different regions. However, it was the advent of modern transportation and communication technologies in the 19th and 20th centuries that led to a significant acceleration in the process of globalization (Fraser, 2022). The expansion of international trade, the growth of multinational corporations, and the increasing flow of information and ideas across borders have all contributed to the growing interconnectedness of the world.

Whatever opinion one may have about the process of globalization, world hunger represents one of the most pressing challenges of globalization. Despite the many impacts, like increased trade and economic growth (Kılıçarslan & Dumrul, 2018), globalization has not succeeded in eradicating hunger and malnutrition in many parts of the world (United Nation News, 2022).

In fact, some people even have argued that globalization has led to increased food insecurity, particularly in developing countries (Vercillo & Park, 2022). In order to address these challenges in regard to global hunger, it is essential that we take a nuanced and critical approach to the study of globalization, recognizing that it is a complex and multifaceted process.

2.3 Global Hunger

At its core, the term global hunger refers to a lack of access to sufficient, safe, and nutritious food for an active and healthy life (Roser & Ritchie, 2023). There are different viewpoints and solutions on how to end or fight global hunger. The two main approaches are the Orthodox and entitlement one.

The Orthodox approach (Teitler, 2023), which is the most traditional one, focus on increasing food production through technological innovations like e.g. with CRISPR-Based Crops (Ahmad et al., 2021) and market-based solutions and is based on the older understanding of development in terms of neoliberal economic growth and free market principles. The entitlement approach (Sen, 1987), on the other hand, emphasizes the need to address the underlying social and economic factors that lead to hunger, such as poverty, land ownership, and power imbalances.

The statements formulated in this essay correspond to an orthodox understanding of global hunger theory. It will be explained in the following how global hunger can be countered with technical innovations and how technical innovations can also lead to a more successful global governance, which also favors the fight against world hunger.

It's to note, that the increasing interconnectedness and interdependence of countries and peoples around the world, can simultaneously contribute to increased food production and to increased hunger at the same time.

On the one hand, globalization can lead to increased trade and investment in the agricultural sector, which has the potential to increase food production and reduce hunger in general (Anderson, 2010). On the other hand, globalization can also lead to increased competition and volatility in food markets, which can make it harder for small farmers and vulnerable communities to access food. Additionally, the unequal distribution of resources and power can perpetuate and exacerbate food insecurity in developing countries (Black, 2016).

One way of counteracting these shortcomings may be the introduction of new technologies, in the spirit of an orthodox approach but also in regards to global governance.

3. Leveraging Technology to Address the Consequences of World Hunger

Following an orthodox approach, technology can play a crucial role in addressing the complex issue of global hunger within the context of globalization and global governance. Advances in agricultural technology, such as precision agriculture (meanwhile even e.g. in form of UAVs) (Puri et al., 2017), and sustainable farming practices (Menalled et al., 2008), have the potential to increase food security (Gebbers & Adamchuk, 2010). Furthermore, the development and implementation of food-related apps, such as those that connect surplus food with those in need (food-sharing), can help to address issues of food waste and inequality in food distribution (Farr-Wharton et al., 2014; Harvey et al., 2020). This quickly makes it clear how many possibilities advancing technologies can offer. Not to mention the new technologies and opportunities that current advances in AI and machine learning bring (Kugler, 2022).

With this advancement of technology, there is also a need for global governance mechanisms to ensure the equitable and responsible use of these technologies. Precision agriculture technology could be implemented to increase food security, but without proper governance, it could also result in further land grabbing and displacement of smallholder farmers. (Fraser, 2019)

One of the most impressive examples of technology being used to address global hunger is the use of Palantir, a data analytics platform, by the World Food Program (Matak, 2021). The WFP utilizes Palantir to analyze large amounts of data, including information on food prices, weather patterns, and transportation logistics, to improve their ability to respond to food crises and target aid to the most vulnerable communities (Palantir, 2023). This would not have been possible without the advancements in technology and the interconnectivity enabled by globalization. But something like that also requires robust data governance mechanisms on a global level to ensure the protection of personal data and the ethical use of information (Otto, 2011).

But the field of global governance, apart from analytics platforms like Palantir, can also make use of a variety of other interesting technologies. Blockchain technology e.g. has the potential to improve transparency and accountability in supply chain management and political decision making, which could also lead to a more efficient, effective and transparent distribution of food and corresponding aid (Filippi, 2020).

So overall, technology, enabled by globalization, can play a significant role in addressing global hunger and global governance, but it is important to consider that these technologies are implemented in a responsible and equitable manner.

4. Conclusion

To sum up, the challenge of addressing global hunger is a complicated matter that necessitates a comprehensive and diverse strategy, taking into account the effects and implications of globalization and its interlinkage with global governance.

Hereby the use of technology can significantly contribute to tackling world hunger by enhancing food production, minimizing food waste, and optimizing aid distribution and global governance mechanisms and therefore providing more food security. But the responsible and equitable implementation of these technologies is essential and can only be achieved vice versa through effective global governance, even though technological advancements could also be used for global governance mechanisms.

However, global governance mechanisms are not without their criticisms, particularly in regards to the lack of representation and accountability of marginalized communities and the potential for unequal power dynamics. Therefore, it is important to ensure that global governance mechanisms are inclusive and participatory, and prioritize the needs of marginalized communities.

Because it seems that the current organizations are not enough, at least in the sphere of global hunger. The growing number of hungry people on our planet speaks for itself. The reasons for this lie primarily in the lack of will to help nations, a lack of a rights-based approach or the inadequate use of new technologies. One question that remains unanswered, nevertheless, is what role the process of globalization actually plays in all of this.

Whether globalization ultimately confronts the problem of world hunger or combats it, with globalization comes an ever-advancing acceleration of technology. According to an orthodox approach, the problem of world hunger therefore can be slowly combated over time, as the examples of Palantir or food-sharing apps have already shown. The great thing about technology is that it always brings new discoveries and possibilities. However, we also need to use these in areas that are usually not so strongly technical.

It is therefore to be hoped that existing technologies will be better used and that future technologies could possibly make a significant contribution to combating global hunger to give all people the life that we all deserve on this planet with enough food for everybody so that everyone can live a secure and fulfilling life, at least in this respect.

5. Bibliography

Ahmad, S., Tang, L., Shahzad, R., Mawia, A. M. et al. (2021). CRISPR-Based Crop Improvements: A Way Forward to Achieve Zero Hunger. *Journal of agricultural and food chemistry*, 69(30), 8307–8323. <https://doi.org/10.1021/acs.jafc.1c02653>

Anderson, K. (2010). Globalization's effects on world agricultural trade, 1960-2050. *Philos Trans R Soc Lond B Biol Sci.* 27;365(1554):3007-21. doi: 10.1098/rstb.2010.0131.

Black, E. (2016). Globalization of the Food Industry: Transnational Food Corporations, the Spread of Processed Food, and Their Implications for Food Security and Nutrition. *Independent Study Project (ISP) Collection.* 2353.

BpB. (2023). Was ist Global Governance? - Zwei Definitionen. bpb.de Bundeszentrale für politische Bildung. Last Accessed 31.03.2023: <https://www.bpb.de/die-bpb/partner/teamglobal/67464/was-ist-global-governance-zwei-definitionen/>

Braun, J. (2010). Food insecurity, hunger and malnutrition: Necessary policy and technology changes. *New Biotechnology*, 27(5), 449–452. <https://doi.org/10.1016/j.nbt.2010.08.006>

Bratspies, R. (2012). Food, Technology and Hunger. *Law, Culture and the Humanities*, 10, 212–224. <https://doi.org/10.1177/1743872112456990>

Buchholz, K. (2022). Infographic: World Hunger Continues Dramatic Rise. *Statista Infographics*. [Online] Last Accessed 01.03.2023: <https://www.statista.com/chart/15477/the-number-of-malnourished-people-worldwide>

Committee for Development Theory (2014). Global governance and global rules for development in the post-2015 era: Policy note. *United Nations*. [Online] Last Accessed 01.03.2023: <https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/2014-cdp-policy.pdf>

Destatis. (2022). 768 Millionen Menschen weltweit haben nicht genug zu essen. *Statistisches Bundesamt*. [Online] Last Accessed 01.03.2023: <https://www.destatis.de/DE/Themen/Laender-Regionen/Internationales/Thema/landwirtschaft-fischerei/Unterernaehrung.html>

Farr-Wharton, G., Choi, J. H.-J. & Foth, M. (2014). Food talks back: Exploring the role of mobile applications in reducing domestic food wastage. *Proceedings of the 26th Australian Computer-Human Interaction Conference on Designing Futures: The Future of Design*, 352–361. <https://doi.org/10.1145/2686612.2686665>

FAO. (2023). Food and Agriculture Organization. *United Nations*. [Online] Last Accessed 01.03.2023: <https://www.fao.org/home/en>

Filippi, P. D. (2020). Blockchain Technology as an Instrument for Global Governance. *SciencesPo Chaire Digital, Gouvernance et Souveraineté*. [Online] Last Accessed 01.03.2023: <https://www.sciencespo.fr/public/chaire-numerique/wp-content/uploads/2020/09/Blockchain-Technology-as-an-Instrument-for-Global-Governance-P.-De-Filippi-1.pdf>

Finkelstein, L.S. (1995). What Is Global Governance? *Global Governance*, 1(3), 367–372.

Fraser, A. (2019). Land grab/data grab: precision agriculture and its new horizons. *The Journal of Peasant Studies*. 46:5, 893-912. DOI: 10.1080/03066150.2017.1415887

Fraser, J. (2022) A brief history of globalization. *World Economic Forum*. [Online] Last Accessed 01.03.2023: <https://www.weforum.org/agenda/2019/01/how-globalization-4-0-fits-into-the-history-of-globalization/>

Gebbers, R. & Adamchuk, I. V. (2010). Precision Agriculture and Food Security. *Science* 327, Issue 5967, pp. 828-831. DOI: 10.1126/science.1183899

Ghimire, S. (2013). Defining and Achieving Freedom from Hunger: A Rights-Based Approach. *Kathmandu School of Law Review*, 3(Special), 54-64. [Online] Last Accessed 01.03.2023: <https://kslreview.org/index.php/kslr/article/view/1017>

Harvey, J., Smith, A., Goulding, J., & Branco Illodo, I. (2020). Food sharing, redistribution, and waste reduction via mobile applications: A social network analysis. *Industrial Marketing Management*, 88, 437–448. <https://doi.org/10.1016/j.indmarman.2019.02.019>

Held, D., McGrew, A., Goldblatt, D. & Perraton, J. (1999). Globalization. *Global Governance*, 5(4), 483–496.

IFAD. 2023. International Fund for Agricultural Development. *specialized United Nations agency*. [Online] Last Accessed 01.03.2023: <https://www.ifad.org/en/>

Kılıçarslan, Z. & Dumrul, Y. (2018). The Impact of Globalization on Economic Growth: Empirical Evidence from the Turkey. *International Journal of Economics and Financial Issues*. 115-123.

Kugler, L. (2022). Artificial intelligence, machine learning, and the fight against world hunger. *Communications of the ACM*, 65(2), 17–19. <https://doi.org/10.1145/3503779>

Letters (2022). Globalisation of food production has left millions hungry. *The Guardian*. [Online] Last Accessed 01.03.2023: <https://www.theguardian.com/world/2022/may/23/globalisation-of-food-production-has-left-millions-hungry>

Matak, V. (2021). VIDEO: WFP and Palantir partner to tackle Covid-19 and world hunger. *World Food Programme* [Online] Last Accessed 01.03.2023: <https://www.wfp.org/stories/video-wfp-and-palantir-partner-tackle-covid-19-and-world-hunger>

Menalled, F., Bass, T., Buschena, D., Cash, D. et al. (2008). An Introduction to the Principles and Practices of Sustainable Farming. *A Self-Learning Resource From the Montana State University Extension*.

Mowbray, J. (2007). The Right to Food and the International Economic System: An Assessment of the Rights-Based Approach to the Problem of World Hunger. *Leiden Journal of International Law*, 20(3), 545–569. <https://doi.org/10.1017/S0922156507004256>

OHCHR (1974). Universal Declaration on the Eradication of Hunger and Malnutrition. *United Nations Human Rights - Office of the High Commissioner* [Online] Last Accessed 01.03.2023: <https://www.ohchr.org/en/instruments-mechanisms/instruments/universal-declaration-eradication-hunger-and-malnutrition>

Otto, B. (2011). Data Governance. *Business & Information Systems Engineering*, 3(4), 241–244. <https://doi.org/10.1007/s12599-011-0162-8>

Palantir. (2023). World Food Programme - Delivering Life-Saving Assistance Using Data. *Palantir Website*. [Online] Last Accessed 01.03.2023: <https://www.palantir.com/impact/world-food-programme/>

PIIE. (2022). What Is Globalization? *Peterson Institute for international economics*. [Online] Last Accessed 01.03.2023: <https://www.piie.com/microsites/globalization/what-is-globalization>

Puri, V., Nayyar, A. & Raja, L. (2017). Agriculture drones: A modern breakthrough in precision agriculture, *Journal of Statistics and Management Systems*, 20:4, 507-518, DOI: 10.1080/09720510.2017.1395171

Roser, M. & Ritchie, H. (2023). Hunger and Undernourishment. *Our World in Data*. [Online] Last Accessed 01.03.2023: <https://ourworldindata.org/hunger-and-undernourishment>

Sen, A. (1987). Hunger and entitlements. *WIDER Research for Action*. [Online] Last Accessed 01.03.2023: <https://ageconsearch.umn.edu/record/295300/files/RFA-1.pdf>

Teitler, A. (2023). AT7 Global Poverty and the Question of Development GGTF. *Lecture at Karlshochschule International University in Global Governance and Transformation*.

UNICEF. (2023). United Nations Children's Fund. *UNICEF*. [Online] Last Accessed 01.03.2023: <https://www.unicef.de/>

United Nations, Department of Economic and Social Affairs (2023). THE 17 GOALS | Sustainable Development. *United Nations Website* [Online] Last Accessed 01.03.2023: <https://sdgs.un.org/goals>

United Nation News. (2023). World is moving backwards on eliminating hunger and malnutrition, UN report reveals. *UN News. Global Human perspective stories*. [Online] Last Accessed 01.03.2023: <https://news.un.org/en/story/2022/07/1122032>

Vanham, P. (2019). Food for thought: Globalization's role in ending world hunger. *World Economic Forum*. <https://www.weforum.org/agenda/2022/05/food-for-thought-globalization-s-role-in-ending-world-hunger/>

Vercillo, S. & Park, A. (2022). Globalised food systems are making hunger worse. *Aljazeera Opinion*. [Online] Last Accessed 01.03.2023: <https://www.aljazeera.com/opinions/2022/12/16/american-globalisation-is-aggravating-africas-hunger>

WFP I. (2023). Innovation and digital transformation. *United Nations*. [Online] Last Accessed 01.03.2023: <https://www.wfp.org/innovation>

WFP II. (2023). World Food Program. *United Nations*. [Online] Last Accessed 01.03.2023: <https://de.wfp.org>

WHO. (2023). World Health Organization. *WHO Website*. [Online] Last Accessed 01.03.2023: <https://www.who.int>