# CHARLES UNIVERSITY

FACULTY OF SOCIAL SCIENCES

Institute CHARLES UNIVERSITY


# Master thesis


**2023** **Chiara Rinaldi**

# CHARLES UNIVERSITY

FACULTY OF SOCIAL SCIENCES

Institute CHARLES UNIVERSITY

**Chiara Rinaldi**


# From food security to food sustainability: the attitudes of the FAO

*Master thesis*

Prague 2023

**Author**: Chiara Rinaldi
**Supervisor**: prof. Jan Karlas

**Academic Year**: 2022/2023

## Bibliographic note

RINALDI, C. *From food security to food sustainability: the attitudes of the FAO* 103 p. Master thesis. Charles University, Faculty of Social Sciences, FSV, Supervisor Prof. Jan Karlas.

# Abstract

Tracing the evolution of the food system paradigm, this research investigates the transition from a narrow focus on food security to a comprehensive food sustainability approach. The study analyses the behaviour of the Economic and Social Council (ECOSOC) and the United Nations Development Programme (UNDP) as source institutions, and their potential influence on the Food and Agriculture Organization's (FAO) strategies in addressing global food security challenges. Spanning from 1990 to 2019, the research examines key official documents from the institutions and relevant literature to unravel the interconnectedness between these institutions and FAO's paradigm shift. The findings shed light on the complex dynamics and interactions of international institutions and their role in shaping sustainable development policies within the food security realm.

# Keywords

Food security; Food sustainability; FAO; Inter-institutional interactions; Global Food System.

## Declaration of Authorship

1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.

2. The author hereby declares that all the sources and literature used have been properly cited.

3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague 26.07.2023 **Chiara Rinaldi**

## Acknowledgments
The author is grateful especially to her family and friends for all the support given.

# Content

## Table of Contents

# Introduction

The aim of my thesis is to investigate whether a causal connection exists between the behaviour of the Economic and Social Council (ECOSOC), and the United Nation Development Programme (UNDP) as source institutions within their developing approach to food security and the subsequent shift in Food and Agriculture Organization (FAO)'s approach towards addressing challenges in the realm of the food system. Specifically, this shift involves moving from a narrow focus solely on addressing food insecurities to adopting a broader approach centred around food sustainability. The investigation will cover the period from 1990 to 2019, providing a sufficient timeframe to study the interconnections between these institutions without becoming overly comprehensive and broad. To achieve this objective, the research will employ the process tracing approach, focusing on a qualitative analysis of main official documents issued by the ECOSOC and the UNDP, together with relevant literature on FAO's shift during the specified timeframe. These official documents and secondary literature will serve as valuable sources of information, offering insights into the decision-making processes, policy resolutions, and collaborative efforts of these institutions concerning food security and sustainability in three decades rich of challenges for the food security system.

This research aims to provide an understanding of the complex interplay between international institutions and their capacity to drive progress on critical global issues. Through this research, the aspiration shed light on the development of the food system aiming to strategies and policies that can effectively address the multifaceted challenges of global food security in the future.

# Chapter 1: Conceptualization

In this chapter the aim is to find the most relevant dimensions and factors related with the two main concepts of the study, food security and food sustainability highlighting their relevance. It will be stressed how within the first concept the approach is narrower, and comprehend mainly availability, access, utilization and stability while within the second concept the approach involves broader factors including social aspects, long term solutions, wise usage of new technologies and clever avoidance of waste and losses.

## 1.1 Conceptualizing "food security"

### Food security: a multidimensional concept

*"Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life"*[1]

The concept of food security can be seen as historically developed starting from this definition above quoted from the World food summit 1996. This definition provided a foundational understanding of what food security entails[2]. Prior to the World Food Summit, the understanding of food security was primarily focused on the availability and production of food. It was primarily seen as a matter of ensuring an adequate food supply to meet the needs of the population. However, the definition adopted in 1996 broadened the scope of food security to encompass not only the availability of food but also its accessibility, utilization, and stability. The inclusion of the dimensions of access, safety, nutrition, and the emphasis on meeting dietary needs and food preferences marked a significant shift in the conceptualization of food security[3]. It highlighted the importance of considering not only the quantity of food but also its quality and suitability for a healthy and active life. Since the 1996 World Food Summit, the concept of food security has continued to evolve in response to emerging challenges[4] and changing global contexts. It has become increasingly recognized that achieving food security requires addressing not only the quantity and quality of food but also the social, economic, and

[1] Definition from: 1996 World Food Summit - https://www.fao.org/3/w3548e/w3548e00.htm

[2] Lang, T., & Barling, D. (2012). Food security and food sustainability: reformulating the debate. *The Geographical Journal*, *178*(4), 313-326.

[3] Ericksen, P. J. (2008). Conceptualizing food systems for global environmental change research. *Global environmental change*, *18*(1), 234-245.

[4] Economic crises, environmental shocks and disruptions, political critical situations etc.

environmental factors that influence its availability, accessibility, and utilization. Over time, food security has expanded in a complex and multifaceted concept that has garnered significant attention from scholars across various disciplines, including international politics, agriculture, economics, and public health[5]. The concept of food security has emerged as a response to the global challenge of ensuring that all individuals, regardless of their socioeconomic status or geographical location, have the right to a consistent access to safe, nutritious, and culturally appropriate food that meets their dietary needs and supports their overall health and well-being[6].

In recent times, the importance of addressing food security has become increasingly urgent due to a confluence of factors and crisis situations: population growth, particularly in developing regions[7], has placed significant strain on existing food systems, making it imperative to find sustainable ways to produce and distribute food on a global scale; the impacts of climate change, such as extreme weather events, changing precipitation patterns, and rising temperatures, have disrupted agricultural productivity and compromised the stability of food supplies in many regions; resource limitations, including land scarcity and water scarcity, further exacerbate the challenges of food production and distribution; economic disparities both

[5] McDonald, B. L. (2010). *Food security*. Polity.

[6] The right to food is explicitly recognized in various international human rights instruments. The Universal Declaration of Human Rights (UDHR), adopted by the United Nations General Assembly in 1948, serves as a primary source for this recognition. Article 25 of the UDHR states that "Everyone has the right to a standard of living adequate for the health and well-being of oneself and one's family, including food." Additionally, the International Covenant on Economic, Social and Cultural Rights (ICESCR), adopted by the United Nations in 1966, further elaborates on the right to food. Article 11 of the ICESCR acknowledges "the right of everyone to an adequate standard of living, including adequate food" and mandates states parties to the covenant to undertake measures to ensure the realization of this right. Moreover, regional human rights instruments, such as the African Charter on Human and Peoples' Rights and the American Convention on Human Rights, contain provisions recognizing the right to food, emphasizing the significance of guaranteeing food access for individuals irrespective of their socioeconomic status or geographical location as an inherent human right. However, it should be noted that the implementation and enforcement of the right to food vary among countries. National governments bear the responsibility of adopting appropriate measures to progressively realize the right to food within their jurisdictions, often necessitating international cooperation to support countries in achieving this objective.

[7] Developing regions, including Sub-Saharan Africa, South Asia, and certain parts of Latin America, are witnessing a significant surge in population growth, presenting formidable challenges to their food systems. These regions are marked by dense populations, constrained agricultural resources, and inadequate infrastructure, rendering the task of satisfying the escalating food requirements increasingly arduous. Limited access to fertile land, water scarcity, and insufficient investment in agricultural technologies further exacerbate the strain on food production and distribution. It is crucial to address these challenges through targeted interventions, sustainable agricultural practices, and improved infrastructure to ensure food security in these regions and mitigate the adverse effects of population growth on their food systems.

within and between countries[8] had significant implications for food security; poverty, income inequality, and unequal access to resources and opportunities restricted individuals' purchasing power and limited their ability to afford an adequate and nutritious diet. These socio-economic factors intersect with other dimensions of inequality, such as gender disparities and social marginalization[9], further exacerbating food insecurity among vulnerable populations. Moreover, conflicts, both at the national and international levels, pose significant threats to stability and therefore on food security with displacement of populations, disruption of agricultural activities, and destruction of infrastructure, that contribute to the destabilization of food systems and to the exacerbation of food insecurity in conflict-affected regions. In these contexts, ensuring access to food becomes an urgent humanitarian concern that necessitates coordinated efforts to provide immediate relief and establish long-term solutions[10].

Addressing food security clearly requires a comprehensive understanding of the interconnected factors that influence food production, distribution, and consumption, entailing the analysis of the socio-economic, political, and environmental contexts in which food systems operate and identifying opportunities for intervention and improvement. From a production perspective, agricultural practices need to be sustainable, maximizing yields while minimizing negative environmental impacts and preserving natural resources for future generations[11]. Efforts to enhance agricultural productivity should be complemented by investments in infrastructure, transportation, and market systems to improve the accessibility and affordability[12] of food for all segments of the population. Utilization of food is another critical aspect of food security: promoting education and awareness about proper nutrition, hygiene, and safe food handling practices can enhance the utilization of available food resources and contribute to improved health outcomes. Dietary diversity, addressing malnutrition (both undernutrition and overnutrition), and encouraging healthy eating habits are essential components of ensuring food security at the individual and community levels[13]. Building resilience within food systems is also necessary, and this involves implementing strategies to mitigate risks, such as

[8] Disparities between developed countries and developing countries, and more generally global North and global South within the context of food complex regime bring institutions to define Low-Income-Food-Deficit-Countries, 44.

[9] Specifically, and mainly rural minorities.

[10] Food and Agriculture Organization (FAO) has a pivotal role in emergency aid and management.

[11] Hence, biodiversity.

[12] Van Berkum, S., Dengerink, J., & Ruben, R. (2018). *The food systems approach: sustainable solutions for a sufficient supply of healthy food* (No. 2018-064). Wageningen Economic Research.

[13] Adeomi, A. A., Fatusi, A., & Klipstein-Grobusch, K. (2022). Food security, dietary diversity, dietary patterns and the double burden of malnutrition among school-aged children and adolescents in two Nigerian states. *Nutrients*, *14*(4), 789.

diversifying food sources, establishing early warning systems, and developing social safety nets that provide support to individuals and communities during times of crisis. Achieving food security, indeed, necessitates collaboration between governments, non-governmental organizations, and international institutions to develop and implement effective policies and programs[14][15], calling for further commitment in order to address the underlying causes of food insecurity (such as poverty, inequality, and environmental degradation) and fostering sustainable development and promoting social justice.

To develop the comprehensive understanding of food security, four key dimensions (that provide a structured approach to analysing and structure the complexities of food security), must be considered: availability, access, utilization, and stability. The conceptual framework builds upon the work of scholars such as Pingali et al. (2005),[16] Pinstrup-Andersen et al. (2009)[17], Misselhorn et al. (2012)[18] and Guiné et al (2021),[19] that have made significant contributions to the conceptualization of food security by stressing the multidimensional nature of food security and that have emphasized the importance of considering various aspects beyond mere food quantity. Their research underscores the need to analyse these four dimensions to gain a holistic understanding of food security. Referring briefly to the four concepts mentioned, it is possible to say that availability indicates the physical presence of food in sufficient quantities; access represents the ability of individuals and communities to obtain and acquire food, involving affordability and distribution; utilization implies the appropriate use and consumption of food to meet nutritional needs, involving factors related to dietary diversity, food safety, hygiene, cultural practices and malnutrition; stability signifies the ability of the food system to withstand shocks and disruptions without compromising access

[14] Zurek, M., Ingram, J., Sanderson Bellamy, A., Goold, C., Lyon, C., Alexander, P., ... & Withers, P. J. (2022). Food system resilience: concepts, issues, and challenges. *Annual Review of Environment and Resources*, *47*, 511-534.

[15] Misselhorn, A., Aggarwal, P., Ericksen, P., Gregory, P., Horn-Phathanothai, L., Ingram, J., & Wiebe, K. (2012). A vision for attaining food security. *Current opinion in environmental sustainability*, *4*(1), 7-17.

[16]Pingali, P., Alinovi, L., & Sutton, J. (2005). Food security in complex emergencies: enhancing food system resilience. *Disasters*, *29*, S5-S24.

[17] Pinstrup-Andersen, P. (2009). Food security: definition and measurement. *Food security*, *1*(1), 5-7.

[18] Misselhorn, A., Aggarwal, P., Ericksen, P., Gregory, P., Horn-Phathanothai, L., Ingram, J., & Wiebe, K. (2012).

[19] Guiné, R. D. P. F., Pato, M. L. D. J., Costa, C. A. D., Costa, D. D. V. T. A. D., Silva, P. B. C. D., & Martinho, V. J. P. D. (2021). Food Security and Sustainability: Discussing the Four Pillars to Encompass Other Dimensions. *Foods*, *10*(11), 2732.

to adequate food, involving price volatility, climate change impacts, conflicts, and natural disasters[20].

## Interconnectedness of Dimensions and contextual factors

The dimensions of food security, that represent the main factors of focus when focusing on food security - availability, access, utilization, and stability – as seen, are closely interconnected and interdependent, meaning that changes in one dimension can have cascading effects on the others[21], ultimately impacting the overall food security of a population or region. Recognizing and understanding these interconnections is crucial for designing effective strategies and policies to comprehensively address food security challenges considering its links to poverty reduction, gender equality, environmental sustainability, and social stability: limited availability can lead to reduced access and affordability, particularly for vulnerable populations; inadequate access affects the utilization of nutritious food, contributing to poor dietary diversity and health issues[22]. Conversely, challenges in utilization, such as lack of nutrition knowledge or inadequate water and sanitation, can undermine access and availability. Instability in food systems disrupts both availability and access. By adopting a comprehensive and integrated approach, FAO, other international organizations, policymakers, researchers and practitioners can work towards building resilient, inclusive, and sustainable food systems developing more effective strategies to address the complex challenges of food security.

The extensive literature on food security examines a diverse range of factors that contribute to its outcomes across socio-economic, environmental, and political dimensions. Socio-economic factors, including poverty, income inequality, and employment opportunities, significantly influence the availability of sufficient and nutritious food for individuals and communities. Environmental challenges, such as climate change, altered weather patterns, natural disasters, and land degradation, pose risks to agricultural productivity, impacting the availability and stability of food supplies: recognizing the interconnection between environmental sustainability and food security is crucial for developing strategies that address both aspects concurrently. Political and governance factors also exert considerable influence on food security outcomes: agricultural policies, trade regimes, and conflicts shape the accessibility and stability of food supplies; effective governance, transparent institutions, and inclusive decision-

[20] Alinovi, L., Mane, E., & Romano, D. (2010). Measuring household resilience to food insecurity: application to Palestinian households. *Agricultural survey methods*, 341-368.

[21] Hodbod, J., & Eakin, H. (2015). Adapting a social-ecological resilience framework for food systems. *Journal of Environmental Studies and Sciences*, *5*, 474-484.

[22] McDonald, B. L. (2010). Food security. *Polity*.

making processes are essential for promoting equitable access to food resources and ensuring resilient food systems[23].

To fully understand the complexities of food security, it is necessary to consider contextual factors that shape its outcomes. These factors encompass socio-economic, political, cultural, and environmental aspects that significantly impact access to food and its utilization. For example, socio-economic factors (income inequality, poverty, and unemployment) directly affect individuals' purchasing power and their ability to afford an adequate diet. Political factors (governance structures, policies, and trade agreements), influence food availability and accessibility at national and international levels. Cultural factors, (including dietary preferences, food traditions, and gender roles) shape food utilization patterns and nutritional outcomes. Environmental factors, (climate change, natural disasters, land degradation, etc), pose significant challenges to agricultural production and food availability[24].

Being aware of these interconnections enables tailored interventions that consider the specific needs and circumstances of different regions and population groups and it facilitates the identification of potential trade-offs and synergies between food security and other development goals, such as poverty reduction, gender equality, and environmental sustainability. By taking a comprehensive and context-specific approach, FAO, other institutions, decisionmakers, policymakers and stakeholders can work towards sustainable and inclusive food security outcomes.

[23] Capone, R., Bilali, H. E., Debs, P., Cardone, G., & Driouech, N. (2014). Food system sustainability and food security: connecting the dots. *Journal of Food Security*, *2*(1), 13-22.

[24] See footnote 16.

## Evolution of the Concept

The conceptualization of food security has evolved over time, expanding beyond mere access to sufficient food to encompass aspects such as nutritional adequacy, cultural preferences, and environmental sustainability. There are ongoing debates about the appropriate scope and boundaries of the concept, as well as its relationship with related terms such as food aid, food sovereignty[25], food justice[26] [27], and food resilience[28]. Within the time frame considered (1990-2019), the concept of food security underwent a significant development and evolution in response to the emerging critical situations to face and to the varying global frameworks[29]. It became increasingly apparent that ensuring access to an adequate number of calories alone was insufficient in effectively addressing malnutrition. This understanding led to the emergence of the concept of food and nutrition security, which underscored the significance of diverse and nutritious diets in promoting optimal health and well-being. Consequently, there was a shift in focus towards emphasizing the quality and the composition of diets, addressing micronutrient deficiencies, and addressing the escalating prevalence of overweight and obesity. Another significant progress was the recognition of the right to food as a fundamental human right[30]. In 2000, the United Nations established the position of a Special Rapporteur on the Right to Food[31], whose role was to promote and monitor the realization of this right. This human rights-based approach to food security emphasized the need for governments to ensure that all individuals have physical and economic access to adequate food, without discrimination. Climate change and environmental sustainability also gained prominence in discussions around food security during this period, especially with the discussions and setting of the Sustainable Development Goals (SDG). As the awareness of the environmental impacts of agriculture and

[25] Clendenning, J., Dressler, W. H., & Richards, C. (2016). Food justice or food sovereignty? Understanding the rise of urban food movements in the USA. *Agriculture and Human Values*, *33*, 165-177.

[26] Cadieux, K. V., & Slocum, R. (2015). What does it mean to do food justice? *Journal of political ecology*, *22*, 1.

[27] Weiler, A. M., Hergesheimer, C., Brisbois, B., Wittman, H., Yassi, A., & Spiegel, J. M. (2015). Food sovereignty, food security and health equity: a meta-narrative mapping exercise. *Health policy and planning*, *30*(8), 1078-1092.

[28] Kirwan, J., & Maye, D. (2013). Food security framings within the UK and the integration of local food systems. *Journal of Rural Studies*, *29*, 91-100.

[29] Timmer, C. P. (2015). *Food security and scarcity: why ending hunger is so hard*. University of Pennsylvania Press.

[30] Alston, P. (1984). International law and the human right to food. In *The Right to Food* (pp. 9-68). Brill Nijhoff.

[31] Ziegler, J; UN Commission on Human Rights. (2001) Special rapporteur on the right to food. The right to food: report / by the Special Rapporteur on the Right to Food, Jean Ziegler, submitted in accordance with Commission on Human Rights resolution 2000/10

food production grew, there was an increased emphasis on sustainable agricultural practices, with the promotion of agroecology, organic farming, and conservation agriculture to minimize the use of synthetic inputs, preserve biodiversity, and reduce the ecological footprint of food systems. Resilience and risk management became central considerations in the concept of food security. The recognition of increasing risks and shocks, such as natural disasters, conflicts, and economic crises, highlighted the need to build resilient food systems. This involved enhancing the capacity of communities and institutions to cope with and recover from these shocks, as well as developing early warning systems and social safety nets to mitigate their impact on food security.

The evolution of the concept has been accompanied by a significant shift in focus within the FAO from the concept of food security to a different concept: food sustainability. Recognizing the interconnections between availability, access, utilization, and stability, the FAO has emphasized the need to produce and consume food in a manner that is environmentally responsible, economically viable, and socially equitable. This shift towards food sustainability acknowledges that achieving food security requires integrating environmental, social, and economic dimensions into our food systems[32]. By promoting sustainable agriculture, biodiversity conservation, and resilient food systems, the FAO seeks to ensure long-term food security while preserving the health of the planet and promoting social well-being. All considered, the conceptualization of food security includes clearly a multidimensional and evolving idea that encompasses various aspects of availability, access, utilization, and stability of food systems. It recognizes the fundamental right of every individual to have access to safe, nutritious, and culturally appropriate food at all times. Furthermore, understanding the complexities and interconnections between food security and other global challenges such as poverty, climate change, and social inequalities is crucial for developing effective strategies and policies. By embracing a holistic perspective and fostering collaboration between actors at all levels, it is possible to imagine the effort needed to guarantee a future where food security is ensured for all, safeguarding the well-being and sustainability of both present and future generations[33].

[32] Young, Oran R. (2002) The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale. Cambridge, MA: *MIT Press*, p. 23; 83–109.

[33] Calicioglu, O., Flammini, A., Bracco, S., Bellù, L., & Sims, R. (2019). The future challenges of food and agriculture: An integrated analysis of trends and solutions. *Sustainability*, *11*(1), 222.

## 1.2 Conceptualizing "food sustainability"

### Food sustainability: beyond food security

Food sustainability represents an inclusive and forward-thinking approach to food systems that takes into account the complex interconnections between environmental, social, and economic aspects, and extends its focus to encompass a longer-term perspective compared to the concept of food security. It underscores the imperative of future oriented solutions and the urgency of adopting sustainable strategies that not only ensure the well-being of present generations but also safeguard the interests and needs of forthcoming generations, while concurrently minimizing the adverse impacts on our planet's delicate ecosystems[34].

Numerous scholars and reputable organizations, such as the FAO, have dedicated extensive efforts to exploring and understanding the concept of food sustainability, recognizing its pivotal role in establishing resilient and equitable food systems worldwide. Through their insightful publications and research contributions, they have shed light on several fundamental points that shape our understanding of this multidimensional concept. Scholars like Stonehouse (2003)[35], Ericksen (2008)[36], Forssell et al. (2015)[37] and Michel-Villareal, Bregoli et al. (2019)[38], emphasize the necessity of embracing a holistic approach when addressing food sustainability, going beyond the traditional focus on agricultural production and consumption and encompassing the entire food system, spanning from the initial stages of food production on farms to its ultimate consumption by individuals. This integrated perspective recognizes the inherent interconnectedness and interdependence of environmental, social, and economic factors at play throughout the entire food value chain.

Doherty (2019)[39] and other researchers in the field widely agree on the paramount importance of environmental stewardship in achieving sustainable food systems, and they emphasize the need to adopt and implement practices that promote sustainable land management, conserve precious water resources, and mitigate the adverse impacts of climate change on agricultural

---

[35] Stonehouse, D. P. (2003). A holistic systems approach to addressing sustainability issues in the agri-food sector. *The Journal of agricultural education and extension*, *9*(1). P. 33-42.

[36] Ericksen, P. J. (2008). Conceptualizing food systems for global environmental change research. *Global environmental change*, *18*(1), 234-245.

[37] Forssell, S., & Lankoski, L. (2015). The sustainability promise of alternative food networks: An examination through "alternative" characteristics. *Agriculture and human values*. P. *32*, 63-75.

[38] Michel-Villarreal, R., Hingley, M., Canavari, M., & Bregoli, I. (2019). Sustainability in alternative food networks: A systematic literature review. *Sustainability*, *11*(3). P. 859.

[39] Doherty, R., Ensor, J. E., Heron, T., & Prado Rios, P. A. D. (2019). Food systems resilience: towards an interdisciplinary research agenda. *Emerald Open Research*.

activities. Moreover, the preservation of biodiversity, protection of delicate ecosystems, and the effective management of pollution and waste emerge as crucial components of environmental stewardship in the context of food sustainability.

Allen et al. (1991)[40], McEntee et al. (2010)[41], Schlosberg (2013)[42], Coulson, Milbourne et al. (2021)[43] and other relevant academics, place a strong emphasis on the significance of social equity and justice as integral aspects of food sustainability even more than previously within the concept of food security, advocating for inclusive and participatory approaches[44]. The concept of food sovereignty, which underscores the importance of local control over food systems, is often highlighted as a mean to achieve social equity and justice in the context of sustainable food systems and of food sustainability. Furthermore, scholars recognize that economic viability is a vital pillar of sustainable food systems, emphasizing the need for fair pricing mechanisms, transparent trade practices, and accessible market opportunities for small-scale farmers and producers. Promoting entrepreneurship, fostering innovation, and encouraging investment in sustainable agriculture are identified as crucial elements in establishing resilient and economically sound food systems that can withstand the challenges of an ever-changing global landscape.

The effective governance and collaboration between diverse stakeholders are deemed critical in realizing the vision of food sustainability; scholars stress the necessity of developing and implementing integrated policies, regulations, and incentives that align with the goals and principles of sustainability, advocating for the active engagement of governments, civil society organizations, researchers, and consumers in fostering collaboration, knowledge sharing, and coordinated action to drive the transformation of food systems towards sustainability. Knowledge and capacity building also emerge as central drivers of sustainable food systems[45]:

---

[40] Allen, P., Van Dusen, D., Lundy, J., & Gliessman, S. (1991). Integrating social, environmental, and economic issues in sustainable agriculture. *American Journal of Alternative Agriculture*, *6*(1), 34-39.

[41] McEntee, J. (2010). Contemporary and traditional localism: a conceptualisation of rural local food. *Local Environment*, *15*(9-10). P. 785-803.

[42] Schlosberg, D. (2013). Theorising environmental justice: the expanding sphere of a discourse. *Environmental politics*, *22*(1). P. 37-55.

[43] Coulson, H., & Milbourne, P. (2021). Food justice for all?: searching for the 'justice multiple'in UK food movements. *Agriculture and Human Values*, *38*. P. 43-58.

[45] Shiel, C., Leal Filho, W., do Paço, A., & Brandli, L. (2016). Evaluating the engagement of universities in capacity building for sustainable development in local communities. *Evaluation and program planning*, *54*. P. 123-134.

Shaw, A., Sheppard, S., Burch, S., Flanders, D., Wiek, A., Carmichael, J., ... & Cohen, S. (2009). Making local futures tangible—synthesizing, downscaling, and visualizing climate change scenarios for participatory capacity building. *Global Environmental Change*, *19*(4). P. 447-463.

it has been highlighted the need for continuous research, education, and information dissemination to support the adoption and implementation of sustainable practices across the entire food value chain. The literature emphasizes the importance of building the capacity of farmers, policymakers, and other stakeholders through training programs and knowledge-sharing initiatives, as this plays a pivotal role in catalysing the necessary transformative changes in our food systems. Scholars stress as relevant also the significance of monitoring and assessing the progress and impacts of sustainable food systems[46], underlining the need for robust indicators, comprehensive data collection, and effective evaluation frameworks that can accurately track and measure the sustainability performance of food systems. This evidence-based approach to decision-making enables stakeholders to identify areas for improvement, make informed choices, and continuously enhance the sustainability of food systems through adaptive strategies and interventions.

The environmental dimension of food sustainability accentuates sustainable practices in agricultural production, including organic farming, regenerative agriculture, and precision farming, and in general all the approaches that are able to minimize negative environmental impacts by reducing soil degradation, water contamination, and to promote biodiversity, preserving natural habitats, and addressing climate change challenges. The social dimension focuses on equitable and just distribution of safe, nutritious, and culturally appropriate food, promoting together with equity and justice, the empowerment of marginalized communities in decision-making processes. Food sovereignty and resilient local food networks contribute to economic development, food security, and social cohesion. Participatory approaches and inclusivity enhance the social dimension. The economic dimension ensures feasibility and resilience in the food supply chain, with the promotion of fair pricing and trade practices, entrepreneurship, innovation, and resource efficiency. Strategies to reduce food waste and embrace circular economy principles minimize waste generation, conserve resources, and support responsible consumption and production.

By integrating these elements, a comprehensive understanding of food sustainability is established. This conceptual framework informs effective strategies, initiatives, and policies to address the interconnectedness of the environmental, social, and economic dimensions.

[46] Blokhuis, H. J., Jones, R. B., Geers, R., Miele, M., & Veissier, I. (2003). Measuring and monitoring animal welfare: transparency in the food product quality chain. *Animal welfare*, *12*(4). P. 445-455.

## Evolution of the concept

The concept of food sustainability has emerged as a relatively new and evolving paradigm[47], distinguishing itself from the traditional focus on food security. While food security primarily addresses the availability and access to an adequate food supply, food sustainability takes a broader perspective, recognizing the interplay between environmental[48], social, and economic dimensions in the pursuit of a resilient and equitable food system. This evolving concept has gained significant momentum in recent years, propelled by the pressing need to address global challenges such as climate change, biodiversity loss, and social inequalities.

The evolution of the concept of food sustainability can be attributed to several key factors: to begin, must be underlined the growing recognition of the environmental impacts associated with conventional agricultural practices. The realization that currents approaches to food production, including intensive farming methods and the use of chemical inputs, are depleting natural resources, polluting ecosystems, and contributing to climate change, has led to a heightened emphasis on environmental sustainability within the food system. New technologies and strategies[49] have emerged as innovative approaches that minimize soil erosion, conserve water, and reduce the reliance on synthetic inputs. This environmental focus aligns with the broader global agenda for sustainable development, notably the SDGs set by the United Nations[50]. In addition to environmental concerns, the fastly developing social dimension of food sustainability has gained even further prominence. As above-mentioned, this dimension recognizes the importance of social equity, justice, and access to safe, nutritious, and culturally appropriate food for all individuals and it acknowledges the need to empower marginalized communities, promote fair trade practices, and uphold the fundamental right to food. The concept of food sovereignty, rooted in the idea of local control over food systems, has emerged as a vital aspect of social justice within the framework of food sustainability. Furthermore, inclusive approaches that consider the diverse needs and perspectives of different stakeholders, including small-scale farmers, indigenous communities, women, and vulnerable groups, are now integral to fostering social cohesion and advancing the principles of food

[47] Harmon, A., Lapp, J. L., Blair, D., & Hauck-Lawson, A. (2011). Teaching food system sustainability in dietetic programs: need, conceptualization, and practical approaches. *Journal of Hunger & Environmental Nutrition*, *6*(1). P. 114-124.

[48] Schulterbrandt Gragg, R., Anandhi, A., Jiru, M., & Usher, K. M. (2018). A conceptualization of the urban food-energy-water nexus sustainability paradigm: modeling from theory to practice. *Frontiers in Environmental Science*, *6*. P. 133.

[49] such as organic farming, regenerative agriculture, and precision farming…

[50] Specifically, SDG 2: Zero Hunger, SDG 12: Responsible Consumption and Production, and SDG 13: Climate Action.

sovereignty. The economic dimension of food sustainability has also undergone a significant evolution: if initially the focus was on improving agricultural productivity and reducing food waste as a means to enhance economic efficiency, then this dimension has broadened to encompass fair pricing mechanisms, transparent trade practices, and the creation of economic opportunities for small-scale farmers and producers. Embracing circular economy principles has become central to the economic dimension of food sustainability, aiming to minimize waste, optimize resource utilization, and maximize value throughout the entire lifecycle of food products. Strategies such as recycling organic waste into compost or bioenergy, utilizing by-products for animal feed, and implementing sustainable packaging solutions exemplify the shift towards a circular food economy.

The concept of food sustainability embodies a rounded and integrated approach that addresses the complex challenges faced by our food systems, comprehending evolving dimensions that are deeply interconnected with the defining elements of the concept itself. It also played a crucial role in supporting the achievement of the SDGs, and as an integrated framework, it helps guide efforts to end hunger, promote sustainable agriculture, ensure food security, and protect the environment. By promoting sustainable practices throughout the entire food value chain, the concept of food sustainability contributes to the broader agenda of sustainable development and the well-being of present and future generations and foster a more resilient future[51].

[51] Lee, B. X., Kjaerulf, F., Turner, S., Cohen, L., Donnelly, P. D., Muggah, R., ... & Gilligan, J. (2016). Transforming our world: implementing the 2030 agenda through sustainable development goal indicators. *Journal of public health policy*, *37*. P. 13-31.

# Chapter 2: Theory and Method

## 2.1 Through the Lens of Inter-Institutional interactions

In the last three decades, addressing global challenges related to food security and sustainability has gained increasing attention from international institutions. The FAO, as a key player in the global food system, has undergone a notable shift in its focus, moving beyond traditional approaches cantered solely on food security to embrace a more comprehensive perspective that incorporates food sustainability. This paper aims to delve into this transition by adopting the relatively new theoretical framework proposed by Gehring and Oberthür (2009), which focuses on inter-institutional relations. The theory of inter-institutional relations concentrates on understanding the causal mechanisms of interaction between international institutions, and more specifically, how these interactions lead to policy change or institutional transformation[52]. Traditionally, scholars have primarily analysed individual institutions in isolation rather than considering the broader network of interconnected institutions within a specific field or area. However, in the case of the food complex area, it became evident that a more systematic approach was needed to explain the complex dynamics and causal mechanisms that drove policy changes not only within the FAO but also in other international organizations operating within the food complex. Therefore, the application of the inter-institutional relations framework offers a more comprehensive and nuanced understanding of the processes and interactions that influenced policy shifts and institutional transformations across multiple institutions in the food complex.

### Inter institutional interactions: Description of the theory

The theory of inter-institutional interactions has been developed and evolved over time through the cumulative efforts of scholars and researchers, gaining prominence and receiving scholarly attention over the past few decades. Scholars such as Oran R. Young, Thomas Gehring[53],

[52] Gehring, T., & Oberthür, S. (2009). The causal mechanisms of interaction between international institutions. *European journal of international relations*, *15*(1). P. 127-130.
[53] Ibidem.

Sebastian Oberthür[54], Måns Nilsson[55], Frank Biermann[56], and others[57][58] have made significant contributions to advancing the understanding of inter-institutional relations and interactions shaping the dynamics of the international institutional regime and providing insights in their cooperation within global environmental governance, with conceptual frameworks, empirical insights, and analytical tools for studying the dynamics and mechanisms of inter-institutional interactions. The theory of inter-institutional interactions, as proposed by Gehring and Oberthür[59], examines the causal mechanisms and dynamics of interaction between international institutions exploring how interactions between source institutions and target institutions lead to policy change or institutional transformation.

On the one hand, source institutions can be defined as proactive entities within a specific policy domain or issue area that actively initiate or promote change, assuming a proactive catalyst role in shaping policy agendas, introducing novel ideas and perspectives, advocating for specific norms or policy reforms, mobilizing resources around particular causes, and exerting influence on target institutions. These institutions are characterized by their norm and policy entrepreneurship, and by high level of expertise, power, and extensive networks that enhance their capacity to drive change effectively. Source institutions can operate at various levels, including international, regional, or national, and may encompass both governmental and non-governmental entities. On the other hand, target institutions (being here the primary focus of analysis within inter institutional dynamics) are the institutions subjected to change or transformation as a direct outcome of their interactions with source institutions. Target institutions can include different bodies such as international organizations, governments, regulatory bodies, or other policy-responsible entities; typically, they possess more specific decision-making authority and the ability to formulate, implement or enforce targeted policies

[54] Oberthür, S. (2009). Interplay management: enhancing environmental policy integration among international institutions. *International Environmental Agreements: Politics, Law and Economics*, *9*. P. 371-391.

[55] Nilsson, M., Pallemaerts, M., & Von Homeyer, I. (2009). International regimes and environmental policy integration: introducing the special issue. *International Environmental Agreements: Politics, Law and Economics*, *9*. P. 337-350.

[56] Biermann, F., Kanie, N., & Kim, R. E. (2017). Global governance by goal-setting: the novel approach of the UN Sustainable Development Goals. *Current Opinion in Environmental Sustainability*, *26*. P. 26-31.

[57] Jordan, A., & Lenschow, A. (2010). Environmental policy integration: a state of the art review. *Environmental policy and governance*, *20*(3). P.147-158.

[58] Keohane, R. O. (1988). International institutions: Two approaches. *International studies quarterly*, *32*(4). P. 380-391.

[59] See footnote 52, and also Oberthür, S., & Gehring, T. (2011). Institutional interaction. *Managing Institutional Complexity; Oberthür, S., Stokke, OS, Eds*. P. 25-58.

and are thus the entities through which changes advocated by source institutions are expected to materialize.

The interactions between source and target institutions can take various forms, such as policy dialogue, collaborative initiatives[60], mutual knowledge exchange[61], obligations developed by the source institutions towards the target institutions[62], strategic alliances or side effects[63]. Through these interactions, source institutions exert influence on target institutions, seeking to shape their agendas, policies, or practices in alignment with their advocated changes. Target institutions may undergo different levels of change or transformation as a result of these interactions, including shifts in perspectives, focal policy priorities, alterations in institutional structures or processes, adoption of new norms or approaches, or revisions to existing policies and practices. The extent and nature of the change depend on the peculiar dynamics and context of the inter-institutional interactions. It is important to note that target institutions are not passive recipients of change, but they are actively engaged with source institutions, assessing the relevance and feasibility of proposed changes, considering the implications and trade-offs, and negotiating the suggested reforms based on their own internal dynamics and external pressures[64]. Thus, the relationship between source and target institutions is often characterized by a reciprocal and dynamic process of influence and response. Hence, in the theoretical lens in use, if on the one side there is one or more source institutions, with their rules, knowledge, ideas, interests, and broad power, on the other side there is the target institution with its own peculiarities, norms, decisions and performances, that is influenced - not passively - by the perceptions and behaviours of the source institutions[65].

---

[60]As stressed by Keohane, R. O. (1988). International institutions: Two approaches. *International studies quarterly*, *32*(4). P. 380-381.

[61] This knowledge exchange is particularly stressed by Oberthür and Gehring (2009) in the cognitive interaction, see footnote 53.

[62] Obligations are particularly involved in interaction through commitment as in Oberthür and Gehring (2009), see footnote 53. Here obligation from the source institution also involve the commitment of one or more states that are members of both institutions. Consequently, this commitment induces changes in the preferences of the states involved, which in turn triggers a re-negotiation of behaviour within the target institution. Ultimately, these modifications in preferences and subsequent re-negotiations have the potential to influence the overall collective decision-making process of the target institution, thus impacting its output.

[63] Underdal, A. (1992). The concept of Regime Effectiveness'. *Cooperation and conflict*, *27*(3), 227-240.
And Miles, E. L., Andresen, S., Carlin, E. M., Skjærseth, J. B., & Underdal, A. (2001). Environmental regime effectiveness: confronting theory with evidence; *Mit Press.*

[64] External pressures here can be either shocks and crisis, or pressure by other institutions, from the society, etc.

[65] Young, Oran R. (2002) The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale. Cambridge, MA: *MIT Press*. P. 23; 83–109.

Having elucidated the actors involved in the theory, it is now imperative to expound on the means through which these actors are interconnected. The interconnectedness of the actors is due to various causal mechanisms identified by the theory of inter-institutional relations[6667]. The present study will not go in the nuances of the specific varieties of interactions but will define and verify the presence or the absence of a strong interaction between source and target institutions in order to understand how the behaviour within one group shape the behaviour and alter the preferences within the other[68]. This web of interactions underscores the intricate nature of governance and the significance of understanding how the decisions and actions of one institution can impact the broader governance ecosystem.

## The Significance of Inter-Institutional Interactions in casting light on the Sustainable Food Governance

The transition from food security to food sustainability represents a critical endeavour in addressing the challenges of global food systems. Understanding the dynamics and processes involved in this shift requires innovative approaches that go beyond traditional perspectives. In this regard, the theory of inter-institutional interactions offers a fresh lens to examine the complex connections and collaborations between organizations involved in shaping food policies and practices. This approach, relatively new in the field, provides valuable insights into the knowledge exchange, and normative influences among institutions[69]. The theory of inter-institutional interactions gives a framework to investigate the interactions between the selected target institution FAO, and its relative source institutions, here identified in the ECOSOC and the UNDP, in their collective pursuit of food sustainability[70]. Applying the theory of inter-institutional interactions permits to analyse how the FAO, the ECOSOC and the UNDP contribute to and overlap in the formulation of policies, shape decision-making processes, and collaborate in implementing sustainable food initiatives with knowledge-sharing and other cooperative strategies. In this context, international norms, obligations and new goals formulated in reports and official documents within the source institutions play a

[66] Oberthür, S., & Gehring, T. (2011). Institutional interaction. *Managing Institutional Complexity; Oberthür, S., Stokke, OS, Eds*. P. 25-58.

[67] See footnote 52, Table p. 146-147.

[68] Alter, K. J., & Meunier, S. (2006). Nested and overlapping regimes in the transatlantic banana trade dispute. *Journal of European Public Policy*, *13*(3). P. 362-382.

[69] Bernauer, T. (1995). The effect of international environmental institutions: how we might learn more. *International Organization*, *49*(2). P. 351-377.

[70] Here the choice of source and target institutions is taken as given, but an explanation of the choice will be offered in at p. 27.

significant role in shaping decision-making processes and the overall perspectives and focus shifts within the FAO as target institution.

This thesis will adopt indeed a focused approach by applying the above explained theory in order to analyse the shift from food security to food sustainability within the involved international organizations. By employing this theory as the primary lens of analysis, the study aims to provide a comprehensive understanding of the dynamics, processes, and outcomes associated with the transition[71]. This focused perspective allows for a deep exploration of the coordination, policy development, normative influences, and knowledge exchange among these institutions, shedding light on their interplay and collaborative efforts in promoting sustainable food systems. By embracing the theory of inter-institutional interactions, this research contributes to the advancement of knowledge in the field of food security and sustainability, offering valuable insights that can inform policymaking, decision-making processes, and collective actions towards achieving global food sustainability goals, more aware of the dynamics at play within the main actors of the Food Complex Regime.

The choice of interinstitutional theory for this research instead of the more traditional realism and neoliberal institutionalism, is based on its ability to provide a more complete and nuanced understanding of the shift of paradigm studied; while realism and neoliberal institutionalism are established perspectives in international relations, they may not fully capture the complexities and interactions involved in addressing global challenges like the one faced by the food system. In fact, on the one side realism's state-centric focus primarily revolves around state interests and power dynamics, potentially overlooking the roles and interactions of international organizations in promoting sustainability; and its limited emphasis on norms and ideas might not fully grasp the normative shifts driving the change from food security to food sustainability within the involved institutions. Furthermore, realism tends to neglect the significance of non-state actors and civil society, which are essential in shaping institutional behaviour in the context of food systems. Similarly, neoliberal institutionalism addresses collective action problems through rational choice models, but it may not fully account for the intricacies of norm diffusion and policy coherence related to the shift to food sustainability. Moreover, neoliberal institutionalism might not offer a comprehensive explanation of how institutions adapt and respond to new global challenges, which is essential when studying how ECOSOC, UNDP, and FAO have evolved their strategies and behaviours in response to faced challenges over the last three decades. Additionally, its narrow emphasis on economic

[71] Gehring, T. (1994). Dynamic International Regimes: lnstitutions for International Environmental Governance.

efficiency might oversee the broader social, environmental, and ethical dimensions of food sustainability. In contrast, inter-institutional interaction theory proves advantageous for this study because it considers multiple actors beyond states, allowing for a more inclusive analysis of the roles of interactions between international organizations like ECOSOC, UNDP, and FAO. Inter-institutional interaction theory also places significant emphasis on norms, ideas, and values, providing valuable insights into the normative shifts driving the change towards food sustainability. Moreover, its recognition of non-state actors and civil society ensures a more comprehensive understanding of the involvement of diverse stakeholders in shaping sustainable food systems. By adopting inter-institutional interaction theory, this research can comprehensively examine policy coherence and implementation, providing insights into the real-world impact of the shift towards food sustainability. Given the complexity of global governance in addressing food sustainability, inter-institutional interaction theory offers a more suitable lens for analysing the intricate interactions between these international organizations.

## 2.2 Method[72]

### Selecting the groups of institutions: source institutions (G1) and target institution (G2)

In the study conducted, since the main point of interest was already identified at the beginning on Food and Agriculture, the identification of the target institution (G2) is made a priori. Starting from the Food and Agriculture Organization as target institution (FAO, G2), then it is necessary to select and match the source institutions (G1) that are indeed appropriate, relevant for and impacting on the FAO (G2). In order to do so it is important to understand that, as in Gehring and Oberthür (2009), a source institution can be described as an international organization or entity that generates broad knowledge, ideas, and policy recommendations on a specific issue, without being able to implement or operationalise strategies. These institutions possess a mandate, expertise, and authority in their respective domains, allowing them to shape

---

[72] Lamont, C. K. (2015). Research Methods in International Relations. Los Angeles: *Sage publications*. P. 79-92.

Maxwell, J. A. (2012). Qualitative research design: An interactive approach. *Sage publications*. P. 78-90

Tracy, S. J. (2019). Qualitative research methods: Collecting evidence, crafting analysis, communicating impact. *John Wiley & Sons*. P.21-36

Barkin, S. (2008). "'Qualitative' Methods?" In Qualitative Methods in International Relations: A Pluralist Guide, edited by Agata Klotz and Deepa Prakash, 211-220. London: *Palgrave Macmillan*.

global policies and influence the actions of other institutions. In the context analysed in this study, to determine the source institutions, it has been used an inductive strategy that, starting indeed by seeing how specialised the target institution is, finds more general bodies within the same United Nation family of Institution retracing the hierarchy of the United Nation bodies[73]. It seemed coherent indeed to explore such a hierarchy in order to reasonably find the appropriate source institutions by looking at less specialised bodies, that have broader power in more contexts and complexes that not only the food regime. Looking at other influential bodies within the United Nations, given the organization's prominent position in global decision-making, and given FAO's position as a specialised UN body, it was possible to identify the position of the ECOSOC that emerged here as the primary pivotal body due to its coordinating function across economic, social, and environmental matters. As the United Nations' principal platform for discussing and addressing global economic and social challenges, the ECOSOC plays a significant role in fostering cooperation and coordination among member states, specialized agencies, and other relevant stakeholders[74]. The broad mandate of ECOSOC encompasses a wide range of issues, including sustainable development, poverty eradication, and social progress. Its inclusive nature allows for diverse perspectives and expertise to be brought together in shaping policies and strategies to address complex challenges such as food security. Given ECOSOC's coordinating role and its ability to facilitate dialogue and collaboration among different actors, it becomes a relevant source institution in the context analysed. Through its initiatives, recommendations, and partnerships, ECOSOC contributes to shaping the global discourse on food security and influencing the FAO's approach to this critical issue. Therefore, considering ECOSOC as a source institution adds depth to the analysis by capturing the coordination efforts and cross-cutting perspectives that contribute to the development of policies and strategies aimed at achieving food security[75].
Moreover, within the United Nation system, UNDP emerges as another highly significant actor as a global development network dedicated to eradicating poverty and reducing inequality. Relevantly it must be noticed that if the ECOSOC is a primary body within the United Nation

[73] Taylor, P., & Groom, A. J. R. (Eds.). (2000). United Nations at the millennium: the principal organs. A*&C Black*. P.5.
Hurd, I. (2008). After anarchy: legitimacy and power in the United Nations Security Council. *Princeton University Press.* P. 93-121.
[74] Spröte, W. (2000). ECOSOC–Economic and Social Council. In *A Concise Encyclopedia of the United Nations*. P. 110-112.
[75] Breen, C. (2007). The Necessity of a Role for the ECOSOC in the Maintenance of International Peace and Security. *Journal of Conflict & Security Law*, *12*(2), 261-294.

family of institutions, UNDP is instead on the same level of FAO as part of the broader United Nation Development Group (UNDG)[76]. Even if it is on the same level of the FAO, this specialised agency has a broader and complementary focus in comparison to the selected target institution, by focusing on the overall development assistance, poverty reduction, and sustainable development and not only on the food system. With its extensive annual reporting system, UNDP serves as a valuable source of documents that can provide evidence and insights useful to the study ongoing. UNDP's reports will contribute to the understanding of food security challenges and potential strategies of the target institution (G2). Given UNDP's extensive expertise and its focus on generating data and knowledge related to development issues, it is reasonable to consider UNDP as a source institution in the context of FAO's policy shaping. UNDP's research, analysis, and recommendations on various dimensions of development, including food security, have the potential to influence the policies and actions undertaken by FAO.

In summary, in the context of food security, the ECOSOC, and UNDP emerge as prominent source institutions (G1), and the FAO has the role of the a priori selected target institution (G2).

*G1 ECOSOC; UNDP*

*G2 = FAO*

The expertise, authority, and recommendations of these source institutions exert influence on the actions and approaches of other institutions, particularly the target institution selected, FAO in the case of this study. The FAO, as the target institution, benefits from the knowledge and policy recommendations generated by the source institutions. It incorporates these inputs into its own strategies and initiatives aimed at addressing food security challenges and promoting sustainable agricultural development. By drawing on the expertise and guidance provided by the source institutions, the FAO is able to align its efforts with global discourses and best practices in the field of food security. This collaboration enables the FAO to enhance its effectiveness in achieving its mandate and contribute to global efforts to ensure food security.

[76] See footnote 73.

## Tool to Analyse Inter-Institutional Dynamics: Process Tracing

The selected method for analysing the topic at hand is process tracing, which has been recognized as a fresh but profound approach in social science research. As advocated by Beach and Pedersen (2019)[77], and by Evangelista (2014)[78] process tracing goes beyond merely identifying correlations between variables. Instead, it delves into the underlying causal mechanisms that drive the observed outcomes. These causal mechanisms, as described by Glennan (1996) [79], are intricate systems that generate outcomes through the interplay of various components. Process tracing is particularly valuable in this research since appear to be appropriate when conducting single-case research[80], as it allows for a detailed examination of the causal mechanisms at work[81] within one case linking the dependent and the independent variables. Rather than focusing solely on identifying patterns or associations, process tracing aims to uncover the step-by-step processes and interactions that lead to the observed outcomes[82]. By tracing the sequence of events and the mechanisms involved, this method offers a deeper understanding of how and why certain outcomes occur[83]. One of the key strengths of process tracing is its ability to uncover the mechanisms that connect initial conditions, intervening variables, and final outcomes, enabling researchers to discern the specific mechanisms and pathways through which cause-and-effect relationships unfold. By examining the processes and contextual factors, process tracing provides a nuanced understanding of the dynamics and complexities inherent in the topic under investigation[84]. In the context of analysing the shift from food security to food sustainability within the FAO, the ECOSOC and the UNDP, process tracing offers a tool to uncover the intricate and eventual causal mechanisms at play between the source institutions (G1) and target institution (G2), allowing to disentangle the complex interactions, decision-making processes, and policy developments involved in this transition. By following sequential steps and identifying the key components involved, process tracing enhances the understanding of how these institutions interact and how

[77] Beach, D., & Pedersen, R. B. (2019). *Process-tracing methods: Foundations and guidelines*. University of Michigan Press.
[78] Evangelista, M. (2014). Explaining the Cold War's end. *Process Tracing*, 153-185. Chapter 6.
[79] Glennan, S. S. (1996). Mechanisms and the nature of causation. *Erkenntnis*, *44*(1), p. 52.
[80] George, A. L., & Bennett, A. (2005). *Case studies and theory development in the social sciences*. mit Press. P. 226-254 (Chapter 9 The Congruence Method).
[81] George, A. L., & Bennett, A. (2005). *Case studies and theory development in the social sciences*. mit Press.
[82] Understood here as the dependent variable.
[83] Checkel, J. T. (2008). Process tracing. *Qualitative methods in international relations: A pluralist guide*, 114-127.
[84] Gehring, T., & Oberthür, S. (2009). The causal mechanisms of interaction between international institutions. *European journal of international relations*, *15*(1), 125-156.

source institutions influence the view of the target institution, contributing to the shift towards food sustainability within it. Scholars have delineated distinct nuances of process tracing: theory testing, theory building, and explaining outcomes. While these variants have subtle differences, for specific cases such as the one under study, it is advantageous to simplify the nuances in order to effectively frame the results. In examining the selected case, the study adopts a strategy of constructing an analysis in order to explain how source institutions shaped the behaviour of the target institution and in order to determine whether there is evidence of a causal mechanism that connect the approach and the policies of the source organizations to the paradigm shift over the chosen time period, and the approach and perspective to and on the same paradigm shift over the matching time frame within the target organization[85]. This approach aims to provide a focused and concise investigation, focusing on the essential elements that contribute to the observed outcomes[86]. By adopting this methodological lens, the study can distil the complexities of the case into a concise framework that elucidates whether a causal relationships mechanism is at play with evidences or not.

In the process tracing methodology, each individual part of the causal machine holds significant importance and must be initially considered in isolation to comprehend the overall functioning. This is the reason why the study started with the conceptualization of these parts, as the whole study leads to a clear understanding of their interconnections and eventual causal relationships[8788]. If on the one side it is reasonable to think that using process tracing enable the researcher to build a solid causal mechanism between the starting points, hence it is relevant to notice how process tracing does not immediately proof causal connection[89] as will be stressed at the end of this study.

[85] Avenburg, A., Gerring, J., & Seawright, J. (2023). How do social scientists reach causal inferences? A study of reception. *Quality & Quantity*, *57*(1), 257-275.

[86] Bennett, A., & Checkel, J. T. (Eds.). (2015). *Process tracing*. Cambridge University Press, p. 21;123;207.

[87] Collier, D. (2011). Understanding process tracing. *PS: political science & politics*, *44*(4), 823-830.

[88] Rohlfing, I. (2012). *Case studies and causal inference: An integrative framework*. Springer.

[89] Bennett, A. (2010). Process tracing and causal inference, chapter 10, process tracing tests, conclusion.

## 2.3 Strategy

Drawing upon the comprehensive framework of inter-institutional relations theory and employing the meticulous process tracing methodology, the research aims to unravel the multifaceted factors propelling the pivotal transition from food security to food sustainability, defining weather a causal mechanism that connect the shift within the source institutions (x, independent variable) and the shift within the target institution (y, dependent variable) is provable or not. In order to do so, the analysis seeks to explore the evolving dynamics, conceptual perceptions, and knowledge exchange between the FAO(G2) and the source institutions (G1).

The starting hypothesis put forth contends that *the evolving dynamics, conceptual perceptions, and knowledge exchange within the source institutions (G1= ECOSOC, UNDP) in the paradigm exert a causal influence on the policy shift from food security to food sustainability within the target institution (G2=FAO) by shaping decision-making processes and policy outcomes.*

By scrutinizing the evolving dynamics, conceptual perceptions, and knowledge exchange within the source institutions and their interplay with the FAO, this study seeks to establish a causal link between these factors and the observed policy shift. Specifically, it aims to uncover how the actions, ideas, and information generated within the source institutions in their focus and perception dynamic evolution on the concepts involved[90] directly impacted the decision-making processes and subsequent policy outcomes and paradigm shift within FAO. Through cognitive interaction, commitment, behavioural interaction, and/or impact level interaction[91], the eventual causal mechanism can serve as conduits for the transmission of influence, enabling the source institutions to shape the direction and the priorities of FAO's policies. This hypothesis posits that the source institutions' evolving dynamics, crisis management, best practises, conceptual perceptions, and knowledge exchange, are instrumental in prompting the shift from food security to food sustainability within FAO. By elucidating the connections and causal pathways between these institutions, this study aims further to contribute to a deeper understanding of how inter-institutional relations can drive transformative policy changes in the context of global food governance.

To ensure a clear and coherent development of the argument and provide valuable findings for the proposed hypothesis, the study will be organized into steps that aim to provide the

[90] Food security and Food sustainability.

[91] See footnote 84.

understanding of the relevant components and dynamics involved in the shift from food security to food sustainability within the target organization (G1=FAO) and its connection to the shift in the source organizations (G2=ECOSOC, UNDP). Opening, the first chapter of the study conceptualized and examined the concepts of food security and food sustainability, exploring the key elements, definitions, and frameworks associated with each concept, highlighting their similarities, differences, and evolving dynamics over time. This conceptualization established a solid foundation for understanding the distinct objectives, strategies, and challenges related to both food security and food sustainability. This conceptualization had here a pivotal role[92] in outlining the factors to look at in both the source institutions side and the target institution side in order to be able to focus on them during the subsequent analysis of the documents, during the dynamic evolution of the concepts that will be run in the following step and lastly to be able to define valuable findings at the end. During the conceptualization, relevant scholars were taken as guide in order to individuate the significant points to mention within each concept, so that the factors analysed can be considered reliable[93].

**Dynamic Evolution of Policies, Strategies, and Perceptions**

After the basis created by the conceptualisation, this step will delve into the dynamic evolution of policies, strategies, and perceptions within the source organizations (G1=ECOSOC, UNEP) and the target organization (G2=FAO). It will explore how these institutions have responded to global challenges, emerging trends, and shifts in conceptual understanding regarding food security and sustainability. By systematically examining policy documents, reports, and official statements, the study will trace the changes in priorities, approaches, and focal areas within the institutions over time[94],[95]. The timeframe selected is 1990-2019, with a further periodisation in three separate decades in order to be able to study in a deeper and more precise way the big number of events happening within the institutions, also reflected in their reports. The reason behind this choice is, first of all, the one to have a considerable amount of time to

[92] Adcock, R., & Collier, D. (2001). Measurement validity: A shared standard for qualitative and quantitative research. *American political science review*, *95*(3), p. 530-531.

[93] Chenail, R. J. (2011). Ten Steps for Conceptualizing and Conducting Qualitative Research Studies in a Pragmatically Curious Manner. *Qualitative Report*, *16*(6), 1722-1730.

[94] Rice, P. L., & Ezzy, D. (1999). Qualitative research methods: A health focus. *Melbourne, Australia*. P. 275

[95] Hergesell, J., Baur, N., & Braunisch, L. (2020). Process-Oriented Sampling. *Canadian Review of Sociology/Revue canadienne de sociologie*, *57*(2), 265-285.

actually see a paradigm shift occurring; then it seemed reasonable to not going beyond 2019 to not involve the COVID pandemic and its effects in the discussion since there is not enough time detachment in order to conduct a research on it yet. Moreover, the years chosen within the timeframe selected contains some very relevant occurrences within the food regime complex that can be considered major for the study ongoing. Another reason for such a structuration (per decade) is related to the expected delay with which the target institution is eventually capable to reach the novel strategies, frameworks and perspectives prompted by the source institutions. The documents provided by the institutions are complete, meaning that they do not cover solely the topic of study but the focus on all the complexities and on many contextual factors that are not included in the study ongoing. In this study it will be covered only the shift within the concepts mentioned, studying the precise relation between the shift within one and the other group of institutions, aware that this is not the whole picture and that the situation is even more multifaceted.

The system with which this step will be developed, is as follows: given, per decade a brief contextual background in order to put forefront the most relevant events in the context of Food Security, there will be the approach of the selected documents concerning the source institutions group, there will be taken under consideration: 1) the annual reports of the ECOSOC to the United Nation General Assembly (UNGA) 2) the Human Development report from UNDP from the selected relevant years[96]; and 3) secondary literature related to FAO's development of the theme, together with some of the annual report on the State of Food and Agriculture provided by FAO. In these documents then, it will be individualized the terms and factors that turned out as fundamental in the conceptualisation step, searching first the precise terms and following with a deep understanding of the context in which they are mentioned and stressed, in order to precisely interpretate where the focus is posed during the evolution of the time frame. The expectation here is to find consistent amount of mentions of the factors discussed in the food security conceptualisation part in the documents from the first decade analysed and in about the first half of the second one, and then the stress -and the number of mentions on such factors- will decrease in the documents from the following years leaving more space to the factors that therefore substantiate the food sustainability concept. Once again it is relevant to limit the analysis here, since the nature of the document under analysis is extremely descriptive and extensive, being these reports, annual reports from general UN bodies, so rather than cover all the contextual factors involved in them the analysis will focus

[96] Available on the relative digital archives.

solely on tracing the focus of the institution regarding the analysed theme and its specific factors. For the reasons mentioned the goal within this step will be to delve into the timeframe selected with a special focus on the events that shaped the paradigm shift and that are indeed relevant to define a change in the perspectives and strategies for both sides, source and target institutions. This step will be fundamental because based on the similarities, and differences within the document analysed in the selected timeframe, it will be possible, in the subsequent step, to compare the policy-shaping within the source and the target institutions with the purpose to define whether there is a verified causal interconnection and therefore a causal inference between the events and strategies occurring in the source institutions and the ones happening in the target institution.

**Comparative Analysis and Causal Mechanisms**

The final step involves a comparative analysis of the elements explained during selected timeframe within both the source institutions and the target institution in order to assess whether a causal mechanism exists between the behaviour of the target institution (FAO) in relation to the behaviour of the source institutions (ECOSOC, UNDP). This analysis will focus on identifying the specific interactions within the theoretical lens chosen, and the linkages between the institutions' behaviours, taking into account cognitive, commitment, behavioural, and impact level mechanisms[97]. In order to do it, the dynamic evolution of the concepts within the two separate sides in the previous step will be relevant to see where and how the target institution (FAO) developed, with expected delay, similar policies and strategies or similar perspective on the concepts because of an influence coming from the behaviour and the events happening in the source institutions. By examining the alignment of objectives, knowledge exchange, policy influence, and collaborative initiatives, the study aims to determine the presence or absence of a causal connection between the source and target institutions and therefore to see to what extent source institutions were influential in the decision making, agenda setting and policy shaping of the target institution.

To make the point clearer it is possible to clarify in logical-mathematical terms the intentions of the following research[98]. Considering the target institution paradigm shift (Y) as the

[97] See footnote 52, 59.

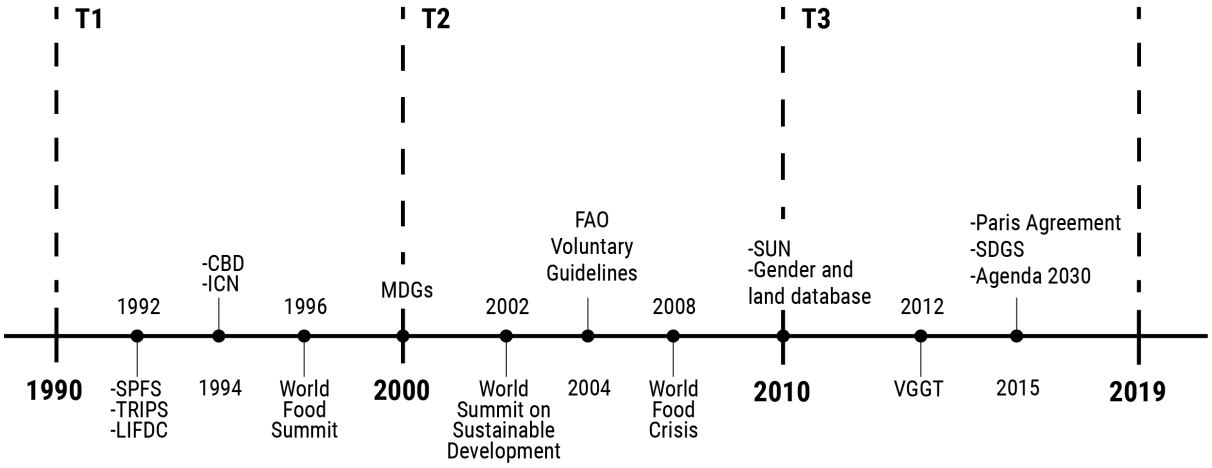
[98] Following Amenta, E., & Poulsen, J. D. (1994). Where to begin: A survey of five approaches to selecting independent variables for qualitative comparative analysis. *Sociological Methods & Research*, *23*(1), 22-53.

dependent variable and the source institutions paradigm shift (X) as the independent variable, it can be written coherently:

$$X \rightarrow \textit{interactions mechanism} \rightarrow Y^{99}$$

The aim of the final step will therefore be the unravelling of the nature of this interactions mechanism that links the dependent and independent variables, discovering weather it is a valuably proven causal mechanism or only an influential mechanism of the independent variable upon the dependent variable.

Through these steps, the study will provide a comprehensive exploration of the conceptual components, policy dynamics, and inter-institutional interactions related to the shift from food security to food sustainability within FAO. By analysing the evolving dynamics within the source organizations and comparing them to the behaviour and policies of FAO, the study aims to generate valuable findings that support or refuse the hypothesis regarding the existence of a causal mechanism between the two groups of institutions.




T1 - timeframe 1
T2 - timeframe 2
T3 - timeframe 3

# Chapter 3: Dynamic evolution of the concept within ECOSOC and UNDP

This chapter aims to examine the dynamic journey towards food sustainability within the source institutions (G1= ECOSOC, UNDP), shedding light on their pivotal role in transforming approaches to food security[100]. Throughout the specified timeframe (1990-2019), these source institutions underwent significant paradigm shifts, moving beyond conventional approaches to embrace holistic and sustainable solutions. By delving into key events, initiatives, and resolutions, this section will unravel the transformative processes that have shaped the global agenda and potentially influenced the FAO's perspective on food security as the target institution. Through the analysis of the official documents provided by the sources, namely the annual reports of ECOSOC to the UNGA and the Human Development report from UNDP from the selected relevant years, this exploration will offer valuable insights into the evolving dynamics within these institutions and their profound impact on the pursuit of a more sustainable and resilient food system. By understanding the multifaceted factors that propelled this transformation, it will be possible to gain a deeper understanding of the drivers and

[100] As explained in chapter 1.

mechanisms that fostered the shift towards sustainability and resilience in addressing global food challenges. As mentioned in the methodological section[101], this investigation will adopt a temporal structure, spanning three decades, with a focus on the examination of key moments and significant events that have influenced the understanding of the paradigm and the strategic behaviour of the international organizations involved as described in the reports. Additionally, a thorough review of the secondary literature allows for a comparative assessment and evaluation, enhancing the depth and breadth of the analysis.

**1990-1999: Shaping the Global Discourse on Food Security**

During the decade covering from 1990 to 1999, the primary focus within the food regime complex was centred around addressing issues of basic food security and emphasizing the significance of agricultural development. This period witnessed an increasing acknowledgment of the importance of guaranteeing sufficient and stable food supplies for populations facing vulnerabilities and risks. Scholars and experts have highlighted the pivotal nature of this era in shaping the global discourse on food security and agricultural policies. For instance, Nobel Amartya Sen emphasized the critical role of food security as a fundamental human right and a prerequisite for overall human development[102]. His work underscored the significance of addressing immediate food needs while also considering long-term agricultural development strategies. Furthermore, the UNDP played a crucial role during this period in advocating for policies that aimed to enhance food security and promote sustainable agricultural practices. Through its Human Development Reports, the UNDP emphasized the linkages between food security, poverty alleviation[103], and human development[104], highlighting the need for comprehensive approaches that address both immediate and long-term challenges[105].

In addition to the UNDP's contributions, organizations like the International Food Policy Research Institute (IFPRI) conducted extensive research during the 1990s on the interplay between agriculture, food security, and development. Scholars associated with IFPRI, such as Per Pinstrup-Andersen[106] and Mahendra Dev[107], provided valuable insights into the

[101] See chapter 2, p. 34.
[102] Sen, A. (1982). The food problem: Theory and policy. *Third World Quarterly*, *4*(3), 447-459.
[103] UNDP report, 1991, p. 23-26
[104] UNDP report, 1992, p.14ss
[105] UNDP report, 1991, p. 7
[106] Pinstrup-Andersen, P. (2009). Food security: definition and measurement. *Food security*, *1*(1), 5-7.
[107] Dev, S. M., & Sharma, A. N. (2010). Food security in India: Performance, challenges and policies.

complexities of food security challenges and the policy interventions required to address them effectively. The 1990s marked a period of intensified efforts to combat hunger and ensure stable food supplies for populations at risk, witnessing two pivotal events, namely the Rome Declaration and the World Food Summit in 1996, that played a crucial role in shaping the trajectory of discussions and actions regarding food security. The Rome Declaration[108], adopted during the World Food Summit held in 1996, served as a milestone in recognizing food security as a global priority, affirming the commitment of nations to eradicate hunger, achieve food security for all, and take concerted action to combat malnutrition. It highlighted the importance of addressing the root causes of food insecurity, including poverty, inadequate agricultural productivity, and unequal access to resources. The World Food Summit, which brought together heads of State and government from around the world, provided a platform for discussions on global food security challenges and the necessary actions to address them, by emphasizing the importance of sustainable agricultural practices, rural development, and international cooperation in achieving food security goals and by calling for concrete measures to increase agricultural productivity, promote sustainable food production systems, and improve access to food for the most vulnerable populations. The international conferences on Nutrition held in 1992 and 1996 were also significant because they brought together stakeholders from around the world to address the pressing challenges of malnutrition and hunger with a focus on developing strategies and policies, providing an effective platform for fruitful discussions and collaborations among governments, civil society, and international organizations. By emphasizing the importance of nutrition in achieving food security, these conferences played a crucial role in raising awareness and shaping subsequent initiatives to address malnutrition and hunger on a global scale[109].

According to the UNDP's human development reports, during the early years of the decade, the primary focus of the discourse on food security was the direct link between food security and poverty, particularly absolute poverty[110]. The reports emphasized the importance of food

[108] Rome Declaration on World Food Security and World Food Summit Plan of Action: World Food Summit, 13-17 November 1996, Rome, Italy, 43 p. FOOD SECURITY DECLARATIONS PROGRAMMES OF ACTION 1996 1996. FAO, 9251039399

[109] International Conference on Nutrition (1992: Rome, Italy), World Health Organization. Nutrition Unit & Food and Agriculture Organization of the United Nations. (1992). International Conference on Nutrition: final report of the Conference, Rome, December 1992. World Health Organization. https://apps.who.int/iris/handle/10665/61254, p. 24 ss.

[110] Ibidem 100; UNDP (1992) p. 14 ss, UNDP (1993), p. 40-44,104; UNDP (1994), p. 10 ss., p.27 ss., p.75 ss.; UNDP (1995), p. 38ss.

availability[111] and access[112], highlighting the ratio of food to other essential needs as an indicator of poverty. It was recognized that ensuring affordability of food, at least to meet minimum calorie requirements, was essential, as access and availability alone were insufficient[113]. The rising concern about food prices led to discussions on potential solutions, including the idea of subsidies to lower costs even if it was acknowledged that such measures could have adverse effects on farmers' incomes and discourage production[114]. As clarified by the UNDP human development report from 1992, the UN Council played a significant role in addressing food security within the context of human development. While progress was made in increasing the daily calorie supply, from 90% to 110% compared to 25 years earlier, it was evident that over 100 million people were still suffering from famine in the early 90s[115]. The key challenges identified were again affordability, access, and availability[116].

During this period, economist Amartya Sen introduced the concept of viewing food as a right rather than a privilege[117], indirectly pointing out the widening gap between the global North and South[118]. It became increasingly clear that food security was inseparable from the broader concept of human security[119], emphasizing the well-being and security of individuals rather than solely focusing on national security. In 1993, the UNDP report emphasized more the integral connection between food security and human security, with food security becoming an essential component of the human development index[120]. In this context, highlighting the pressing need to address the growing gap between global North and global South[121], the report underscored the significance of implementing measures such as distributing food supplements in developing countries and initiating substantial land reforms, also in order to achieve greater equity in access to nutritious food and reducing disparities in food security between different regions and populations[122]. The growing population emerged as a pressing concern, as it

[111] Notably there was a +18% in the period 80-90s, UNDP report 1994, p. 27 ss.
[112]UNDP report 1991, p 67.
[113] UNDP report 1991, p 194 ss.
[114] UNDP report 1991, 1993
[115] UNDP report 1992, p. 10 ss.
[116] UNDP 1994, p. 27.
[117] UNDP report 1992, p.29; UNDP report 1994, p.10 ss.
[118] Notably, around 60% of the energy consumption, accounting for 70% of the total global energy, was attributed to food production activities in the global North. This realization underscored the imperative to address the underlying structural disparities between the Global North and Global South.
[119] UNDP report 1994, p. 8 ss.
[120] UNDP 1993, p. 1-10; p 104.
[121] UNDP, 1994, p. 222
[122] See footnote 112.

necessitated a tripling of food production to meet the needs of the expanding population[123]. This underscored the importance of sustainable agricultural practices and production methods to ensure long-term food security. Additionally, the issue of food waste gained prominence[124], with discussions highlighting the need for effective measures to minimize wastage throughout the food supply chain. However, it was acknowledged that efforts to protect agriculture and implement stringent monitoring systems could potentially lead to increased food costs, which could have negative repercussions. The consequences of food scarcity, malnutrition, and undernourishment emerged as significant threats to human security, further underscoring the urgency to address these challenges in a comprehensive and sustainable manner.

During the latter half of the decade, the reports raised significant concerns and critiques regarding various aspects of food security, such as the lack of progress in addressing food waste, (with a strong emphasis on the need for improved measures to mitigate this problem[125]); the challenge of solving disparities, particularly gender disparities in land rights and access to resources; the intersection of conflict and food insecurity[126], having conflicts profound impacts on food production, land availability, water supplies, soil quality, etc. The Horn of Africa here serves as a stark example, where the region experienced a tripling of mortality and disease rates compared to non-conflict periods, underscoring the devastating consequences of conflict on food security[127]. The UNDP reports emphasized the importance of implementing better strategies to address basic needs and income distribution in order to prevent situations similar to those experienced in countries such as Pakistan, Egypt, and Lesotho[128]. In the sub-Saharan region, the UN recognized the precarious nature of the food security situation and took action by launching a special initiative in March 1996[129] with the purpose of coordinating development efforts focusing on improving governance as a means to alleviate instability and enhance food security and food supply. The recognition of conflicts in this context underscored the significance of stability as a critical factor in ensuring food security. By prioritizing stability

[123] UNDP report 1994, p.2.
[124] See footnote 112.
[125] UNDP report, 1995, p. 13ss.
[126] UNDP report 1996, p. 24ss.
[127] Exploring the example of the Horn of Africa conflict in the 1990s provides valuable insights into why the connection between conflict and food security was considered fundamental in the UNDP report. This specific case highlights the devastating impact that conflicts can have on food systems and the subsequent implications for the well-being of populations.
[128] UNDP report 1993, p. 79
[129] UNDP report 1996, p. 105.

and promoting good governance, it was believed that the risks and challenges associated with food security in the region could be effectively addressed and mitigated.

Another noteworthy aspect highlighted in the reports was the emphasis on small-scale agriculture as a means to generate employment and reduce food prices. It was recognized that promoting and supporting small-scale farming could contribute to enhancing food security[130]. The adoption of appropriate technologies in agricultural practices was also seen as a potential avenue for improving food security outcomes. By leveraging technological advancements, such as improved irrigation systems or more efficient farming techniques, small-scale farmers could increase their productivity and contribute to a more sustainable and resilient food system.

In the latter part of the decade, there was a noticeable shift in focus towards the significance of social factors in the realm of food security: the concept of food justice emerged, recognizing the social and political dimensions associated with food. The reports from 1997 explicitly highlighted the interconnectedness of food, society, and politics, underscoring the need to strengthen support and policies by specialized agencies like the FAO[131]. This shift in perspective acknowledged that food security encompasses more than just ensuring availability, stability, access and affordability, as previously highlighted in the earlier years of the decade: it recognized, and it stressed the importance of considering social aspects and addressing systemic inequalities to promote a fair distribution of food resources.

During the last biennium of the decade, there was a focus on globalization as a tool that could create opportunities for discussing global issues such as food insecurity and food justice on relevant platforms and as a significant part of the international agenda. However, globalization also presented new challenges in the field: while it had the potential to enhance food production, it also led to increased inequalities and disincentivized localism, particularly affecting small farmers and local food production. During this period, there was also an emphasis on the importance of public investment in ensuring long-term food stability and security[132]. Additionally, food education was highlighted as a crucial aspect in promoting conscious consumption, considering not only calorie intake but also the quality of nutritious food that ensures good health[133]. Issues such as loss of biodiversity, deforestation, and food ignorance were brought to the forefront of discussions[134]. The Human development report from

[130] UNDP report 1997, p. 8, 110.
[131] UNDP, 1997, p. 115ss.
[132] UNDP, 1998, p. 6ss.
[133] UNDP, 1998, p. 218.
[134] UNDP, 1998 p.5 ss; UNDP, 1999, p.57, 67, 72.

1999, further revealed a 25% improvement in production per capita between 1990 and 1997[135]. However, it also highlighted that malnutrition remained a pressing issue affecting over 840 million people[136]. The evolution of the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement in 1999 marked a significant achievement in the realm of food security. Building on the foundation established in 1994, developments of the TRIPS provided opportunities for agricultural innovation, particularly in the field of biotechnology. By promoting investments in agricultural biotechnologies such as GMOs and enhanced crop yields with improved nutritional content and resistance to pests and diseases, TRIPS created avenues for enhancing agricultural productivity and addressing food security challenges. Additionally, TRIPS played a role in facilitating food trade by establishing minimum standards for intellectual property protection, contributing to a more stable trade environment, which is crucial for ensuring easier agricultural market access and trade. The agreement provided a framework that encouraged investment and technology transfer, ultimately benefiting agricultural producers and consumers alike. However, it is necessary to acknowledge also the potential risks associated with TRIPS, similar to those highlighted in the context of globalization[137]: the concentration of intellectual property rights in the hands of a few large corporations can pose challenges for small farmers, disincentivizing their production and potentially exacerbating inequities in the agricultural sector. Furthermore, there is a concern that TRIPS could contribute to a reduction in agricultural diversity. These aspects warrant careful consideration and the need to strike a balance between intellectual property protection and fostering inclusive and sustainable agricultural systems[138].

By examining the official reports of the ECOSOC to the UNGA as well, a more comprehensive understanding of the dynamic evolution of food security and sustainability throughout the decade can be gained. At the outset of the decade, the primary concern raised by ECOSOC to the UNGA was once again food insecurity, particularly in the least developed countries; in response to this concern, on May 23, 1990, ECOSOC's President Gharekhan appointed Pakistan, Belgium, Egypt, Japan, and Sweden to form a committee on food aid policies[139] with the purpose of developing a comprehensive strategy to address this pressing issue, taking into account the diverse needs of countries from both the global North and South, and the developed

[135] UNDP, 1999, p. 22.
[136] UNDP, 1999, p. 28.
[137] UNDP 1999, p.67-75.
[138] UNDP 1999, p. 65-67.
[139] ECOSOC, 1990, p. 90.

and underdeveloped regions. During the 47th session of ECOSOC, the UNGA requested the Secretary-General to submit an updated and comprehensive report specifically on Food and Agricultural development[140]. The committee was expanded, and new targets were set for the World Food Programme (WFP) pledges for the period 1993-1994. Additionally, Resolution 1991/78 recommended that the UNGA adopt a draft resolution, along with a revision of the general regulations. This discussion emphasized the importance of food production and highlighted the interdependence of environment and development[141]. ECOSOC appealed to member states and international organizations, such as FAO, to enhance assistance and strengthen aid programs related to food through appropriate humanitarian channels to address the pressing food security situation. Furthermore, ECOSOC urged the UNDP and FAO to resume their respective assistance programs in their areas of expertise. On July 26, 1991, the draft Resolution on Food and Agriculture was adopted, representing a significant milestone in addressing the challenges of food security and promoting sustainable agricultural practices[142]. The adoption of this resolution was highlighted in the report from 1991, that indicated its importance in the context of addressing various pressuring issues, including disaster reduction such as the one exemplified by the impact on food production of the Desert Locust infestation in Africa. Additionally, international economic cooperation gradually gained traction as a crucial element interconnected with food and agricultural development. In the 48th session of ECOSOC, there was a notable and explicit call for closer collaboration by FAO in developing multisectoral approaches to address food-related issues and their interconnected challenges. The emphasis was on fostering a comprehensive partnership to tackle these pressing concerns[143].

As the decade progressed, the increasing costs of food became a worrisome issue that drew the attention of ECOSOC[144]. This rise in costs raised questions about the situation of net food importing countries and prompted calls for the implementation of policies to address these challenges. The interdependence of agriculture, food security, population dynamics, and social factors became evident[145]. It was recognized that revitalizing the agricultural sector was

[140] ECOSOC, 1991, p. 3, E/CN.4/Sub.2/1991/65 page 62

[141] ECOSOC, 1991, p. 88.
[142] See footnote 137,138.
[143] ECOSOC, 1993, p. 42.
[144] ECOSOC, 1993, p. 20.
[145] ECOSOC, 1993, p.21ss.

essential, particularly in regions like Africa where the growth in food production was not keeping pace with population growth. In light of these circumstances, achieving food security became the highest priority. A call was made for initiatives focused on improving storage, transportation, and communication facilities, formulating regional strategies, expanding early warning systems, establishing support networks for agriculture, and enhancing water management. These measures were seen as critical components in the pursuit of long-term food security and sustainable agricultural practices.

In 1996, ECOSOC made a request to FAO to prepare a report that considered the Convention on Biological Diversity (CBD)[146] and the United Nation Convention to Combat Desertification[147], particularly in countries facing droughts in Africa, marking a significant shift where environmental factors started to receive attention and became a topic of discussion in the decision-making process. ECOSOC, emphasizing the importance of states action in response to environmental concerns, recommended that governments urgently develop and implement appropriate policies for the management of water resources, recognizing their critical role in food production. Additionally, a discussion on long-term financing took place, highlighted by the draft decision 1996/213[148]. This underlined the need for sustained financial support to address the challenges related to water management as a fundamental need for effective food production, also reflecting a growing recognition of the interconnections between environmental sustainability, biodiversity, desertification, and water resource management in achieving food security and sustainable development. Towards the end of the decade, gender disparities, the right to food, and other social factors began to receive increased attention in the discussions on food security within ECOSOC[149]. There was a recognition that food should not be used as a tool for political pressure, emphasizing the importance of ensuring access to food for all individuals, regardless of their social or political circumstances. In this context, on the 25th of March 1999, FAO was once again requested by ECOSOC, to produce comprehensive and accurate reports on the World Food Summit. These reports aimed to provide a detailed analysis of the global food situation, to identify challenges and opportunities, and to propose strategies to address food security concerns. The increased emphasis on gender equality in access to land, the right to food, and the avoidance of using food as a political tool

[146] CBD, 1992, https://www.cbd.int/doc/legal/cbd-en.pdf
[147] UNCCD, 1994, https://catalogue.unccd.int/936_UNCCD_Convention_ENG.pdf
[148] ECOSOC, draft decision 1996/213, Option for Resource Policies and Long Term Financing of the World Food Programme.
[149] ECOSOC, 1998, p. 40 ss, ECOSOC 1999 p. 66.

marked a significant shift in the understanding of food security as the decade came to its end. It signified a recognition that food security goes beyond mere availability and accessibility of food and encompasses broader societal issues such as social justice, equality, and human rights[150].

This evolving perspective on food security indicated that the 2000s would bring about a different approach to addressing food security challenges. It highlighted the need for more comprehensive strategies that not only focused on increasing food production and access but also prioritized social equity, gender equality, and the protection of human rights.

The recognition of food security as a multidimensional issue laid the foundation for a more holistic and inclusive approach to ensure sustainable and equitable food systems in the years to come, reflecting a growing awareness that addressing food security requires to face the underlying social, economic, and political factors that contribute to food insecurity and inequality.

### 2000-2009: Navigating Global Crises: Food Security in an Ever-Changing World

The years 2000-2009 were transformative for the global food complex, as new events reshaped prevailing paradigms. At the very beginning of the decade, a pivotal moment was the adoption of the Millennium Development Goals (MDGs) by the UNGA: these ambitious goals influenced the entire Food Regime Complex and provided a framework for organizations like FAO to align their efforts. In 2002, for instance following the trend posed by the MDGs, the World Food Summit assessed progress and challenges in achieving the goals set in 1996, offering an opportunity to identify pathways forward; the same year also witnessed the first International Conference on Financing for Development in Monterrey, Mexico, that highlighted the need for sufficient financial resources to address food security effectively. Recognizing the unique challenges faced by the African continent, the Comprehensive Africa Agriculture Program (CAADP) was launched in 2003, aiming to address the specific agricultural challenges and opportunities in Africa, and providing a framework for sustainable agricultural development and food security. The year 2008 brought about a global food crisis that reverberated across nations, prompting a response from the international community: in response to this challenging situation, United Nations Secretary-General Ban Ki-moon established a High-Level Task Force on Global Food Security Crisis, underscoring the urgency of addressing food security at a global level. Building upon these developments, in 2009, a

[150] ECOSOC, 1998, p. 41.

Committee on World Food Security was established, further emphasizing the commitment of the international community to tackle food security issues comprehensively[151].

These significant events and initiatives throughout the decade laid the foundation for an in-depth analysis of the official documents and reports, providing valuable insights into the evolving discourse and strategies employed to address the complex challenges of food security. During the 2000-2009 period, the annual global reports by the UNDP shed light on the evolving concept of food security and its interconnectedness with various other areas, expanding beyond mere access and availability, and recognizing food security as a fundamental right that imposes corresponding obligations. This recognition reinforced the importance of other related rights such as healthcare, housing, and education, complementing and reinforcing one another, stressing also food justice as a pivotal subject. Also, global technology played a crucial role in shaping the food complex throughout this decade, and specifically it has been considered as a tool to eradicate poverty by offering new opportunities for agricultural production. Access to high-yielding food crop seeds, facilitated by agreements such as TRIPS, demonstrated the potential impact of technology on increasing agricultural productivity. Furthermore, environmental concerns gained prominence, as a safe environment was recognized as an integral part of human rights, and this focus emphasized the interplay between agricultural production, trade, and the environment together with the need for sustainable practices to protect both human health and the planet. Violations of the right to food remained a significant concern, particularly in developing countries where a large number of people still suffered from undernourishment. The right to food became a defining factor in the Human Development Index, highlighting its critical role in achieving overall human development. Calls were made for improvements in respecting human rights and fostering cooperation at various levels, including community engagement. The absence of stability in contexts where the right to food was violated underscored the importance of democratic governance and effective conflict management, as stability was seen as a prerequisite for improving the food situation[152]. Mary Robinson, in her role as the UN High Commissioner for Human Rights, emphasized the universality of rights, including the right to food, health, and education, placing importance on their equal application for all individuals[153]. Organizations like Food First Information and

[151] Misselhorn, A., Aggarwal, P., Ericksen, P., Gregory, P., Horn-Phathanothai, L., Ingram, J., & Wiebe, K. (2012). A vision for attaining food security. *Current opinion in environmental sustainability*, *4*(1), 7-17.

[152] As also stressed by UNDP, see p. 41,42.

[153] UNDP report, 2000, p.113.

Action Network (FIAN) used media platforms to promote the universality of these rights, advocating for policy changes that ensured food access for everyone, with a particular focus on the economic environment[154].

Technological advancements were a major focus during this decade, with the aim of leveraging technologies as smart tools to improve the food security situation. However, the relationship between new technologies and development was not straightforward: technological innovations carried risks, particularly for poor countries that were unable to benefit from them and instead faced a potential denial of development opportunities. The paradox of new technologies became apparent: while they were intended to increase agricultural production, the subsequent decrease in food prices put developing countries in an even more tensive situation. The decrease in food prices indeed, led to the phenomenon of food dumping, whereby protectionist agricultural measures in developed countries resulted in an oversupply of food in developing countries. This situation further undermined the position of local small farmers that started facing unfair huge competition with the cheaper products coming from abroad[155].

Moreover, public investment in crops and agricultural research in developing countries suffered as private agricultural research in developed industrial countries took precedence. As evidence of this, the funding for the Consultative Group for International Agricultural Research stagnated during this period, with a decline from $378 million per year in 1992 to $336 million in 2000[156]. Recognizing the challenges and opportunities presented by new technologies, FAO and WHO were entrusted with the mandate to assist developing countries in harnessing the benefits while effectively managing the associated risks. One of the primary objectives of the decade was to halve global hunger by 2015, as stressed by UNDP Human Development report from 2002[157]. This goal naturally imposed certain conditions that needed to be met in order to achieve it: stability, reduced conflicts, and the promotion of democracy emerged as key factors influencing food security. Stability in particular, played a crucial role as it positively impacted food security, while conflicts had a detrimental effect, affecting food security due to their direct impact on food production. During conflicts, agricultural yields are indeed damaged, and the distribution chain become uncertain. Data from the period indicates that out of the 21 countries

[154] UNDP report 2000, p. 117.
[155] UNDP report 2001, p. 51, 110.
[156] CGIAR, 2001.
[157] UNDP report 2002, p. 21, 24; UNDP report 2003, p. 87, 133,

facing extreme food emergencies in 2002, 15 were experiencing ongoing conflicts[158]. The connection between conflicts and food security is evident as in regions affected by conflicts, the ability to produce and access food is severely disrupted, leading to increased food insecurity and vulnerability. Conflicts not only damage agricultural infrastructure and disrupt farming activities but also create an environment of insecurity and instability, making it difficult for people to engage in food production and access essential resources. On the other hand, stability and peace contribute positively to food security because when societies are stable, agricultural activities can flourish, leading to increased food production and availability. Additionally, stable conditions enable the implementation of effective distribution systems, ensuring that food reaches those in need. Stability also fosters investment in agricultural infrastructure, technology, and research, further enhancing food security outcomes. Recognizing the link between stability, conflicts, and food security, efforts were made to promote democracy and conflict resolution as means to improve food security. Democracy provides a framework for peaceful governance, citizen participation, and the protection of human rights, including the right to food. By promoting democratic principles and institutions, societies are better equipped to address food security challenges and create an environment conducive to sustainable agricultural development. The focus on stability, conflict reduction, and democracy in the quest to achieve the goal of halving hunger by 2015 reflects an understanding of the deep-rooted connections between peace, governance, and food security.

The South Africa famine in 2002 served as a significant event that brought attention to the complex nature of food security, highlighting the importance of effective management, which was carried out by organizations like FAO. This event underscored the broader understanding that achieving the MDGs requires not only creating stability but also addressing long-term environmental concerns, by investing in new technologies while managing the associated risks, improving trade and food distribution, and preventing environmental degradation. Sharing resources equitably plays a crucial role in addressing acute challenges like global warming. Moreover, promoting more equitable land distribution and ensuring greater involvement of women in accessing land are key factors for increasing agricultural efficiency.[159] Empowering women, along with implementing food emergency plans and recognizing international

[158] UNDP report, 2003, p. 88, Millennium Project Task Force 2 2003b.

[159] In Africa, women play a significant role in food production, yet they often face inequalities in land access, with limited security even when they have access.

responsibilities, is essential. The era of globalization has seen extensive discussions on cultural liberties, inclusive societies, and identity; however, it has also exposed the persistent challenges of discrimination and exclusion faced by many societies[160].

During the middle of the decade, the emergences of AIDS and HIV had a profound impact[161], having intricate connections with food security, along with conflicts and environmental degradation, as pointed out in 2005 UNDP Human Development Report[162]. The relationship can be understood as follows: conflicts often lead to instability, causing damage to food production and trade networks; this instability, in turn, creates insecurity and vulnerability, resulting in uncertain hygienic and nutritional conditions and ultimately leading to health problems and hunger. In the past, food aid was often seen as a solution to address these challenges, however, over time, it became increasingly apparent that food aid is significantly more expensive, approximately 40% more costly, than open market transactions[163]. This realization prompted a shift in the approach to addressing food security in the context of health crises and conflicts.

UNDP Human development report for 2006 report also highlighted the existence of parallels between water insecurity and food insecurity[164]. During this period, new tools and approaches started to emerge, one of which was the concept of virtual water trade. This concept can be utilized as a strategic element in national security strategies and to address food security challenges, particularly in the poorest countries such as Mozambique, Zimbabwe, Zambia, and Malawi. The imperative in these countries is to enhance productivity in order to effectively tackle these challenges[165]. In contrast to the situation in the poorest countries, it is worth considering the paradox of abundance and the concept of entitlements, as theorized by Sen. In the era of globalization, the abundance of food in certain regions can paradoxically exacerbate

[160]UNDP report, 2003, p. 90 ss.
[161] UNDP report, 2005, p. 22.
[162] UNDP report, 2005, p. 152ss.

[163] TIED aid league.

UNDP report, 2005, p. 184, Jepma 1991; Aryeetey, Osei and Quartey, 2003. There are a range of estimates of the costs of tied aid. One study of project- based aid in Ghana found that input costs could have been lowered by 11%–25% by untying aid (McKay and Aryeetey 2004). Earlier studies covering larger groups of countries estimated costs in a higher range, at 15%–30%. The OECD puts the additional cost of tied food aid at 50% (OECD/DAC 2004b).

[164] UNDP report, 2006, p. 80.
[165] UNDP report, 2006, p. 164-165.

challenges in local markets, leading to increased famine and widespread malnutrition. This occurs when the influx of food supply from abroad undermines competition with local small farmers, leaving them with insufficient income to procure necessary food resources[166].

In 2008, the global crisis further aggravated the challenges faced in the food security domain, as reflected in the reports, with its profound impact on agricultural production, which is intricately linked to food security, and was compounded by climate change shocks such as rainfall shortages and rising temperatures. The resulting ecological stress and increasing climate shocks disrupted the food system, leading to a surge in food prices. It is importantly recognized in the reports that income and food security are inherently interconnected. As highlighted by Sen, hunger often stems from the inability to acquire food due to insufficient means, rather than a scarcity of food itself. When income is inadequate and prices are high, people are forced to adjust their dietary needs according to their expenditure capacity. The global food crisis had a particularly significant impact on extremely poor countries, where climate shocks directly and swiftly affected the population. These effects were felt much more rapidly than in developed countries due to the lack of stored resources. As a result, cereal deficits sharply increased, as seen in the case of Nigeria, which experienced a deficit of 223,000 tonnes[167].

Towards the end of the decade, UNDP reports emphasized the interplay between economic growth, improvements in health, and education, which indirectly impacted food systems and food security. The linkages primarily revolved around the Human Development Index and the education level: when one of these two is low or weak, it can have a cascading effect on the other, and consequently, directly or indirectly on the whole system. Gender disparities also came into sharp focus during the later years of the decade. The issue of gender inequality in relation to land and food rights gained significant attention, prompting FAO to be called upon to establish a new database specifically dedicated to gender and food rights. In closing, Dreeze[168] described hunger as a behemoth, a multi-headed monster that persists stubbornly, even in the face of increased food production. This analogy highlights the complex and persistent nature of hunger as a global challenge pointed out by UNDP reports.

[166] UNDP report, 2006, p. 80.

[167] UNDP report 2007-2008, p. 85, Chen and Meisel, 2006, Mousseau and Mittal 2006; MSF 2005; Seck 2007a.

[168] UNDP report 2007-2008, p. 35.

Shifting the focus from the analysis of the UNDP documents, it is pertinent to explore also the valuable insights presented in the ECOSOC documents submitted to the UNGA as done with the previous decade. These significant documents serve as a conduit for unravelling the complex intricacies and decision-making processes of the source institutions, thereby exerting a profound influence on the actions and policies of the FAO.

The ECOSOC documents, aligning with the UNDP reports, underscore a fundamental shift in the perception of food, transcending its status as a mere necessity to being recognized as an essential and inviolable right. This recognition of the right to food is exemplified in Decision 259, wherein the United Nations Council approved the Commission of Human Rights' request, as outlined in Resolution 2001/25[169], for the special rapporteur to submit a preliminary report on the implementation of this resolution during the 56th session of the UNGA. The right to food, which emerged at the onset of the decade as part of the Millennium Development Goals, assumes significance not in isolation but in conjunction with other intertwined factors: notably, the integration of peace and development proves to be profoundly interconnected. In the context of Africa, the advancement of these two pillars serves to bolster food security plans and policies that promote both adequate nutrition and secure land tenure[170]. ECOSOC acknowledges the critical interconnections among agriculture, food production, access to food, agro-diversification, rural development, and food security. By emphasizing the need for food security, the report highlights a call for comprehensive enhancements across all these interconnected aspects. From the 2001's report is evident how both ECOSOC emphasizes the need for strengthened measures, particularly through enhanced assistance to African countries, in combating challenges such as land degradation, droughts, and desertification. This support is made possible through the generous contributions of donors, partnerships, and collaboration. Additionally, there is a call for accelerated implementation of water-related operational activities within the UN system, aimed at improving access to safe water for households and agricultural purposes. This aligns with the findings of UNDP reports, which highlight the strong connection between water security and food security[171]. The promotion and replication of successful initiatives, such as the "New Rice for Africa" project[172], are also advocated.

[169]ECOSOC, 2001, p. 80. https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/documents/2001/decision-2001-259.pdf

[170] ECOSOC, 2001, p.22.

[171] As seen at page 45.

[172] "New Rice for Africa" project, also known as NERICA, is an agricultural initiative focused on developing and promoting new varieties of rice specifically adapted to the African continent. Launched in the late 1990s by the Africa Rice Center (formerly WARDA), NERICA aimed to address the challenges faced by African rice farmers,

Furthermore, the UN system actively advocates for trade rules that promote food security and fair market access, in line with the Marrakesh decision[173]. Prioritizing agricultural and rural development, as well as creating new poverty reduction strategies, are still crucial aspects of achieving food security objectives, it is indeed essential to promote measures that facilitate food production and the implementation of effective national policies. Ultimately, the goal of halving hunger by 2015 is reaffirmed as a key priority in these discussions.

The recognition of food as an inviolable right is further underscored by decisions such as 2003/244[174], which extended the mandate of the special rapporteur on the right to food for an additional three years. Similarly, decision 2004/252[175] called for the special rapporteur to submit a report to the UNGA at its 59th session and a report to the Commission at its 61st session on the implementation of resolution 2004/19. These decisions highlight the ongoing commitment to addressing food security as a fundamental human right and the importance of monitoring and reporting on its implementation at the international level.

The subsequent reports underline the growing emphasis on environmental concerns and the long-term perspective in development, driven by the goals and standards set by the MDGs.

Aligned with the insights gleaned from the previously examined UNDP reports, the ECOSOC documents also highlight the significance of the African famine situation and express a profound concern for food security in LDCs. These documents underscore the pressing need for an international response to effectively address these emergencies, calling for the provision of appropriate food aid and the implementation of long-term strategies to prevent famines. To ensure operational effectiveness, the approach towards developing countries, as outlined in the Doha Ministerial Declaration, must be tailored and specifically targeted. It is recognized that also investments are imperative in order to achieve this objective. Notably, the G8 member

---

such as low productivity, vulnerability to pests and diseases, and limited access to improved varieties. The project sought to introduce and disseminate high-yielding and resilient rice varieties that could enhance food security, increase income for farmers, and contribute to agricultural development in Africa. The reference to the "New Rice for Africa" project in this context highlights the importance of supporting successful initiatives and replicating best practices to improve agricultural productivity and contribute to food security on the continent.

[173] The Marrakesh decision refers to the agreement reached during the Uruguay Round of multilateral trade negotiations held in Marrakesh, Morocco, in 1994. It established the World Trade Organization (WTO) and encompassed various agreements aimed at liberalizing global trade and regulating international trade practices. In the context of this discussion, the reference to the Marrakesh decision highlights the importance of trade rules that support food security and fair market access, emphasizing the need for equitable and sustainable agricultural trade policies.

[174]ECOSOC, 2003, decision 244. https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/documents/2003/decision-2003-244.pdf

[175]ECOSOC, 2004, p. 25ss. https://www.un.org/en/ecosoc/docs/2004/decision%202004-252.pdf

countries played a significant role in this regard[176], as outlined in the Action Plan against famine[177] adopted in Evian the 3rd of June 2003. During the round table B in 2004 within the ECOSOC meeting, as stated in the report from that year, there was a notable emphasis on the importance of attracting foreign direct investment in the least developed countries. Ministers and head of delegations participating in the high-level segment of the substantive session of 2004 ECOSOC, New York, underscored the significance of creating an enabling environment, which includes addressing food security, combating the HIV/AIDS pandemic, malaria, tuberculosis, and improving access to social services for women, the poor, vulnerable groups, and environmental protection[178].

In addition to recognizing food as a fundamental right and adopting a long-term perspective in policies and agricultural strategies, ECOSOC also focused on addressing disparities, particularly gender disparities[179], emphasizing the importance of empowering women, specifically those in rural areas, at all levels, ensuring them access to and security of land and promoting nutritious food intake. The issue of gender equality and empowerment of women was extensively discussed during the round table 6 of the 2005 [180] meeting and continued to be a topic of importance in subsequent discussions, such as round table 4 in 2006[181]. ECOSOC importantly acknowledged the existence of disparities in terms of poor and minority groups that demand equal consideration within the food system. The empowerment of the poor in this context was a topic of discussion in 2005, featuring notable statements from Latortue, the Prime Minister of Haiti, and Jacques Diouf, the Director-General of FAO[182]. In subsequent years, the focus shifted towards strategies that aimed to create work opportunities and employment, particularly in the Least Developed Countries (LDCs), as a means of empowering the poor. It was recognized that globalization did not necessarily act as a facilitator, especially for these countries. Consequently, there was a strong call for social development initiatives, exemplified by the Beijing Declaration and Platform for Action, as well as the 23rd Special Session of the

[176]ECOSOC, Ministerial declaration, 2003, point 6. https://www.un.org/en/ecosoc/docs/declarations/ministerial_declaration-2003.pdf

[177]G7 research group, Action Against Famine, Especially in Africa: A G8 Action Plan, 2003, Toronto University. http://www.g7.utoronto.ca/summit/2003evian/famine_en.html

[178] ECOSOC, 2004, p.25.

[179] ECOSOC, 2005, p. 17, Round table 6.

[180]Ibidem.

[181] ECOSOC, 2006, p. 22.

[182] ECOSOC, 2005, p. 15.

UNGA[183]. These initiatives underscored the need to promote inclusive growth and reduce socio-economic inequalities, thereby fostering food security and sustainable development.
Notably, the heads of personnel in ECOSOC had already anticipated the possibility of a global food crisis in 2008. This foresight is evident from the commencement of the 2007 session, which featured a round table discussion titled "End Cycle of Food Crisis" where Harcharik, Deputy Director-General (FAO), proposed the concept of homegrown green revolutions as a potential solution[184]. Subsequently, in 2008, when the predicted global food crisis materialized, ECOSOC addressed the issue in the reports, taking into account the various generative factors. Climate change and the need for environmentally sustainable strategies for food production emerged as pressing priorities. Additionally, they recognized the imperative of stabilizing the financial situation and fostering economic development to alleviate concerns about spikes in food prices. The report from 2008 also underscored the importance of redoubling efforts to achieve the goal of halving hunger by 2015[185].
This effort involved also the concept of common but differentiated responsibilities among countries, as outlined in Principle 7 of the Rio Declaration on Environment and Development[186]. The urgent international call for action emphasized the need to strengthen sustainable environmental development, taking into account the varying levels of responsibility and capability among nations. It also acknowledged the escalating rate of environmental deterioration and the challenges associated with protecting shared natural resources. By recognizing the differentiated responsibilities, the international community aimed to foster a more equitable and effective approach to addressing environmental issues and promoting sustainable development[187]. Acknowledging the gravity of these challenges, there was a strong emphasis on implementing key objectives outlined in the CBD [188] and striving for a significant reduction in the rate of biodiversity loss by 2010. Additionally, there was a renewed commitment to combat desertification and land degradation, as well as stabilize greenhouse

[183] ECOSOC, 2007, p. 22ss.
[184] ECOSOC, 2007, p. 17.
[185] ECOSOC, 2008, p. 31.
[186] ECOSOC, 2008, p. 29.
[187] ECOSOC, 2008, p.27-31.
[188] The three main objectives of the Convention on Biological Diversity (CBD), 22 May 1992, are: conservation of biological diversity; sustainable use of the components of biological diversity; fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
https://www.un.org/ldcportal/content/convention-biological-diversity-and-its-protocols#:~:text=The%20Convention%20on%20Biological%20Diversity,the%20utilization%20of%20genetic%20resources.

gas concentrations in the atmosphere within a timeframe that allows ecosystems to adapt to climate change without jeopardizing food production. These objectives were built upon the principles outlined in Article 2 of the 1992 UN Framework Convention on Climate Change (UNFCCC).

In June 2008, the high-level conference on World Food Security held in Rome, focused on the challenges posed by climate change and climate disasters, following the establishment of the high-level task force on the global food crisis by the Secretary-General in May. During the conference, there was a call for investments in rural development to safeguard food production, to promote sustainable urbanization in order to prevent soil degradation, and to implement more sustainable agricultural strategies aiming to address the global food crisis with effective and enduring measures[189]. By 2009, the three main concerns remained unchanged: the financial crisis was impeding progress towards achieving the Millennium Development Goals, leading to a rise in food crisis and food insecurities; climate change continued to exacerbate the overall situation, further complicating efforts to address these challenges[190]; and an urgent collective efforts and actions to secure the long-term sustainability of the food system [191]was needed to establish a robust food assistance and support safety net, implementing programs able to address specific instances of hunger, malnutrition, and shortages at the local and regional levels, with a tailored approach[192]. In the panel discussion held on July 15, 2009, the focus was on the current economic, food, and climate change crises, and their impact on the achievement of the Millennium Development Goals (MDGs), highlighting the role of the UN system in supporting national efforts to address these challenges[193]. Towards the end of the decade, according to ECOSOC report for 2010, the need was onto a refocus on agricultural development, particularly in improving production technologies that can promote and ensure sustainable food security. The concerns for LDCs remained a priority, reflecting ongoing concerns for their well-being and development[194].

The decade from 2000 to 2010 witnessed significant developments and challenges in the global food system as the focus shifted towards recognizing food as a fundamental right and addressing issues of food security, gender disparities, and disparities among the poor and

[189] ECOSOC, 2008, p.30.
[190] ECOSOC, 2009, p.27,34, 43.
[191] ECOSOC, 2009, p. 67.
[192] ECOSOC, 2009, p. 28.
[193] ECOSOC, 2009, p. 37.
[194] ECOSOC, 2010, p. 110, point 7.

marginalized. The concept of sustainable development gained prominence, with an emphasis on the interconnectedness of agriculture, environment, and long-term planning.

## 2010-2019: Towards a Sustainable Future: Integrating Food Security and Sustainable Development Goals

In the examined decade, the 2008 world food crisis acted as a significant background shock that led to a shift in focus for source organizations. It prompted the recognition of the need for long-term actions and the development of sustainable policies, necessitating the involvement of new areas, technologies, and strategies[195]. Several pivotal events during this period influenced the approach to food systems, security, and sustainability. In 2011, the high-level meeting on Food Security addressed rising food prices. In 2014, the Rome Declaration on Nutrition emphasized healthy and sustainable diets. COP21 in 2015 resulted in the Paris Agreement, focusing on urgent climate action. The adoption of SDGs and the 2030 Agenda provided a framework for addressing food security and sustainability, stressing integrated efforts among governments and institutions.

According to the annual UNDP reports, the beginning of the examined decade witnessed a strong emphasis on sustainability and equity, taking into consideration the environmental risks and challenges and their significant impact on food security and the overall sustainability of the food system[196]. These reports highlighted that environmental factors are projected to increase world food prices by 30% to 50% in real terms over the coming decade, accompanied by an escalation in price volatility. The most profound repercussions of these trends are expected to be felt by households and the vulnerable population, particularly the 1.8 billion people engaged in agriculture and fishing activities who will directly experience the impacts of climate change[197]. Additionally, according to the UNDP report for 2011, rural communities that heavily rely on natural resources for their livelihoods will face substantial challenges with a further exacerbation of existing inequalities. UNDP reports underscore the urgent need to address the environmental risks and challenges that impact food security and sustainability. They highlight the potential increase in food prices and volatility, primarily affecting vulnerable households and populations engaged in agricultural and fishing activities. The consequences of these direct issues will lead to a widening gap in equality, both between and within different groups, further emphasizing the imperative for concerted efforts to mitigate climate change and promote inclusive and sustainable development[198].

---

[195] Viana, C. M., Freire, D., Abrantes, P., Rocha, J., & Pereira, P. (2022). Agricultural land systems importance for supporting food security and sustainable development goals: A systematic review. *Science of the total environment*.

[196] UNDP report, 2011, p.1,81ss.

[197] UNDP report, 2011, p.4.

[198] UNDP report, 2011, p. 13.

Environmental degradation indeed affects different regions of the globe to varying extents, depending on factors such as net resource consumption or production. The challenges posed by climate change, including deforestation and soil degradation, can have significant implications for access to natural resources, leading to scarcity and limiting the potential for global development. Despite the increasing environmental challenges experienced over the past two centuries, it is visible that the food system has significantly improved, along with the standards of life and overall development. This progress can be attributed to advancements in technologies, agricultural strategies, and techniques. The implementation of green revolutions has played a crucial role in maintaining food production in alignment with the growing global population. These advancements have allowed for increased productivity, improved crop yields, and the adoption of more sustainable farming practices. As a result, food security and the overall sustainability of the food system have witnessed substantial advancements, contributing to improved living standards worldwide[199]. However, it is important to acknowledge that the benefits of these improvements have not been equally distributed. Disparities still exist, and vulnerable populations, particularly in developing regions, may face challenges in accessing the benefits of technological advancements and sustainable agricultural practices, that together with heightened awareness remain crucial due to the persistent issue of severe food insecurities affecting approximately 1 billion people.

The UNDP's annual reports[200] have recognized that the 2008 and 2010-11 crises, along with the shock of non-renewable resources, have spurred technological innovation and the exploration of substitutions to tackle resource shortages. However, it is recognized that not all resources can be easily substituted, leading to the development of the concepts of weak and strong sustainability mentioned in UNDP report for 2011. The concept of weak sustainability focuses on the total capital stock rather than solely on natural resource depletion, while strong sustainability emphasizes the preservation of fundamental natural assets[201]. The reports highlight the importance of finding an optimal approach that combines both concepts, striving to preserve basic assets while simultaneously improving efficiency and resource management. Chronic environmental threats, although not new, have gained heightened awareness due to their significant impact. Biodiversity loss poses another major concern as it directly affects wild food sources that are crucial for rural communities. Additionally, land degradation

[199] UNDP report, 2011, p.15ss.
[200] UNDP, 2013, p. 1ss.
[201] Neumayer, E. (2003). *Weak versus strong sustainability: exploring the limits of two opposing paradigms*. Edward Elgar Publishing.

hampers productivity and food production, posing threats to livelihoods and food security, particularly in vulnerable regions. Considering the varied effects of different environmental changes on land, labour, and food production, understanding the joint impacts becomes increasingly important.

Price spikes in food commodities were recognized as highly perilous, as evidenced by the 2008 crisis with significant repercussions for the poor who allocate a significant portion of their income to basic food staples. During price spikes, in order to cope and survive, the poor are often compelled to make adjustments to their diets by sacrificing nutrition and lowering the quality of their food basket consumption. The repercussions of the 2008 crisis extended beyond the financial realm, impacting the food and water systems, agricultural production, and investments. These effects were exacerbated by the continuous new challenges posed by climate change. Consequently, there has been a growing need for reducing vulnerability and enhancing resilience, with a particular focus on developing countries and on the implementation of policies that enable them to a long-term empowerment. Notable examples include the Indian National Rural Development Scheme, the Nepal Emergency Employment Program, the Food for Work policy in Bangladesh, and Argentina's Jefes y Jefas de Hogar desocupados program[202]. The report for 2014 emphasized a mismatch between global governance and global institutions: although the shared goal of prioritizing people exists, there is a lack of cooperation and collective action to ensure that global and regional regulatory systems effectively respond to insecurities, arising the disparity between global challenges and the existing mechanisms of global governance[203].

Throughout the decade, as highlighted in the UNDP reports, food and nutrition systems faced persistent threats. A notable example is the case of Niger, where crises occurred in 2005, 2008, 2010, and 2011. It has been acknowledged that while humanitarian appeals and food or cash assistance can provide temporary relief and restore immediate food entitlements, they do not address the underlying vulnerabilities that perpetuate food insecurity. Hence, such measures are considered more of a palliative solution rather than an effective long-term strategy. Among the most vulnerable groups impacted by these challenges are smallholder farmers that often face lack of access to necessary resources, face climate-related risks, and struggle with limited market opportunities.

[202] UNDP, 2014, p.95.
[203] UNDP, 2014, p.121.

The UNDP report for 2015 emphasizes the significant potential of the internet in leveraging technologies and facilitating trade in food, water, and agricultural supplies, leading to more efficient farming methods, enhanced traceability in trade, and reduced waste within the food supply chain, which currently experiences substantial losses and waste (around one-third of food production[204]). The reports suggest various solutions to address this waste, including community-based mud stocks, family-based storage units, and hermetically sealed bags. Technologies evolution also play a crucial role in improving crop varieties, particularly in developing climate shock-resistant strains. Additionally, technologies such as agroforestry and water harvesting contribute to more sustainable practices by smartly managing water and fertilization. However, there is a call for further improvements in the implementation of these technologies, as their application is often hindered by bureaucratic and normative barriers, resulting in a slow adoption rate. In this decade, the priority has been placed on "people," and technology has been recognized as a crucial tool for achieving sustainable development that benefits both the present and future generations. The term "universalism" started to emerge in UNDP report for 2016 reflecting the understanding that in order to ensure inclusivity and address those left behind, transformative changes in global institutions and the acceleration of high-impact interventions across multiple dimensions are essential[205]. This approach aims to create a win-win situation for the current generation, future generations, and the environment but implementing such strategies can be costly.

Transitioning to another area of focus, it has been stressed in the documents the importance to address the continued significance of gender equality in food systems. Building upon the discussions evolved in the previous decade, the reports highlight the importance of this issue also in this timeframe, expanding the scope beyond equal access to land[206]: the analysis now encompasses broader dimensions, including the crucial aspects of enabling women's access to education and creating opportunities for employment. Recognizing the interconnection between education and work, efforts towards gender equality in food systems take into account various facets to empower women and promote their meaningful participation.

---

[204] UNDP, 2015, p.141 and GEDI (Global Entrepreneurship and Development Institute). 2014. "The Gender Global Entrepreneurship and Development Index (GEDI): A 30-country Analysis of the Conditions That Foster High-potential Female Entrepreneurship." Washington, DC.

[205] UNDP report, 2016, p. 85ss, 105.

[206] UNDP report, 2016, p.6.

The year 2015 marked a significant turning point with the event witnessed, in the UNDP report for this year, critical topics such as climate finance, low emissions, environmental rights, energy efficiency, renewables, and sustainability were emphasised as key priorities[207]. The concept of the right to food, which had been emphasized in previous decades, expanded to encompass broader dimensions: it now includes aspects such as transparency, fair trade, long-term accountability, the right to environmental security, and the right to information, as exemplified by the 2009 Bangladesh Right to Information Act by Union Parishad[208]. In the context of advancing the right to food, notable progresses have been made, as illustrated by the India National Food Security Act of 2013[209]. This transformative legislation has played a pivotal role in expanding the right to food by establishing a comprehensive food security net program. Through this program, highly subsidized food grains are distributed to 67% of the population[210].

In the latter years of the decade, the reports emphasized the need to move beyond income, averages, and the present moment, highlighting the importance of creating a future that prioritizes the well-being of humanity. The concept of the "next frontier", as evolved during the human development report for 2020, involves shifting towards a circular economy, particularly in food systems, to unlock their potential and move away from outdated linear approaches[211]. This report underscores the urgent need for ecological societies, which can be achieved through local environmental stewardship and it also points out that despite advancements in developed countries, where refrigerated food can be delivered to homes with a simple app request, a stark contrast remains with developing nations that continue to grapple with the problem of starvation[212]. This discrepancy highlights the persistent issue of unfair trade, where imports serve as a means of exploitation by wealthy countries at the expenses of poorer nations. Inequality is a significant concern, both in terms of trade and of the disproportionate responsibility for environmental damages[213]. It is notable that the concept previously discussed as "shared but differentiated responsibilities" in scholarly discourse of

[207] UNDP report, 2015, p.137ss.
[208] UNDP report, 2016, p. 133.
[209] UNDP report, 2016, p. 142.
[210] Montes, M., & Lunenborg, P. (2016). Trade Rules and Integration Trends and Human Development. *Background paper for Human Development Report*.
[211] UNDP report, 2020, p. 86-103
[212] UNDP report, 2020, p.121.
[213] A 10% (representing rich countries) is provoking most of the environmental damages.
Pollard, C. M., & Booth, S. (2019). Food insecurity and hunger in rich countries—it is time for action against inequality. *International journal of environmental research and public health*, *16*(10), 1804.

past decades has gained renewed and, in a way, inverted relevance, underscoring the need for a nuanced understanding in addressing these inequalities. One other of the challenges posed by environmental damage and strongly stressed in the reports is the loss of genetic biodiversity. In response, there is an urgent call for regenerative agriculture, agroforestry, silvo-pasture, and the implementation of habitat protection measures. Additionally, safeguarding wild crops is crucial to promote and preserve agrobiodiversity before reaching a point of no return.

Upon analysing the reports from ECOSOC to the UNGA throughout the decade, it becomes evident that there is a noticeable alignment between the information and findings presented in these documents and those provided by the UNDP. The reports from both sources converge in their emphasis on key issues, policy recommendations, and the need for collective action to address global challenges. This alignment underscores the cohesive and comprehensive approach taken by different bodies within the United Nations system in addressing critical issues related to development, sustainability, and the pursuit of the Sustainable Development Goals. The ECOSOC reports to the UNGA, both at the beginning and throughout the decade, consistently emphasized the need to financially support developing countries, recognizing that these nations were disproportionately affected by various interconnected crises[214]. These crises had significant economic and financial impacts, causing volatility in energy and food prices, and raising concerns about global food security. While the shocks impacted the entire international community, it was acknowledged that developing countries bore a heavier burden and required substantial support to address these challenges effectively[215]. Additionally, the reports highlighted the crucial role of education in ensuring food system security and the development of sustainable technologies. Efforts to enhance agricultural productivity and promote sustainable agricultural practices were strongly encouraged, focusing on strategies such as smart storage, employment generation across the agricultural value chain, and building trade capacities.

The Committee on World Food Security played a significant role in facilitating countries to conduct assessments on sustainable food production and security. An important thematic discussion titled "Food Security and Nutrition: Scaling Up the Global Response" was held on February 14, 2013, with the active participation of FAO Director-General Graziano da Silva. During this joint meeting with the Second Committee of the UNGA, the Council urged LDCs, their development partners, and the UN system to intensify cooperative actions and efforts in

[214] ECOSOC, 2011, p.3ss.
[215] ECOSOC, 2012, p. 78.

fully implementing the commitments made in the Istanbul Programme of Action[216]. In 2016, the UNGA declared the UN Decade of Action on Nutrition, calling for increased efforts to address malnutrition in all its forms. This initiative aimed to improve food security, nutrition, and sustainable agriculture, with the involvement of ECOSOC and UNDP[217]. The decade (2016-2025) sought to mobilize global action and collaboration to eliminate all forms of malnutrition and improve overall nutrition patterns. Special attention was given to undernutrition, including stunting, wasting, micronutrient deficiencies, and related diseases, as well as obesity. Emphasis was placed on promoting sustainable food systems by setting principles and actions to guide efforts towards nutrition improvements and food security. Sustainable food systems were envisioned as providing safe, nutritious, and affordable food in a continuous and sustainable manner, highlighting the need to improve agricultural approaches, promote dietary diversity, and prevent food loss and waste. Collaboration between stakeholders and the development of coherent policies and governance were stressed as crucial. Monitoring progress and generating data to track the implementation of nutrition-related commitments were deemed necessary strategies as stressed in the High-level meetings and summits in 2019[218].

Throughout the period from 2010 to 2019, there was a notable increase in awareness regarding the interconnections between climate change and food security. ECOSOC, and UNDP placed significant emphasis on the integration of climate change adaptation and mitigation strategies within food security policies and programs. This approach aimed to effectively tackle the challenges posed by shifting climatic conditions on agriculture and food production. By recognizing the urgency of addressing climate change impacts, these entities underscored the need to develop comprehensive and sustainable solutions to ensure food security in a changing climate.

[216] Priority B of the Programme indeed, focused on agriculture, food security, rural development, infrastructure, and energy, emphasizing the need for policies to achieve sustained, equitable, inclusive economic growth and food security. Joint Special Meeting of ECOSOC and the Second Committee on Food security and nutrition: Scaling up the global response.

[217] ECOSOC, 2013, p 76,78.

[218] ECOSOC, 2019, p. 11, point 81,82. https://unctad.org/system/files/official-document/ecosoc_res_2019d24_en.pdf

# Chapter 4: Dynamic evolution of the concept within FAO

The objective of this chapter is to explore the dynamic evolution of the FAO's approach to food security, focusing on the transition from a narrow focus on addressing specific crises to a broader and more comprehensive understanding that encompasses the entire food system and emphasizes the concept of food sustainability. This shift reflects the growing recognition of the interconnected nature of food security, environmental sustainability, social equity, and economic viability.

The analysis will be structured around the same key time periods as done for the source institutions with a focus on the most significant events that have influenced the FAO's understanding of food security. This exploration aims to shed light on the factors that have shaped this shift in perspective and expanded the scope of the FAO's actions in addressing food security challenges, and possibly to see if there is a causal mechanism between these changes in behaviour and approach and the changes within the source institutions.

### 1990-1999: The Narrow Approach to Food Security

During the 1990s, the prevailing understanding of food security within the FAO, primarily focused on ensuring food availability and access, and this approach was encapsulated in the definition of food security provided by FAO in 1996 during the World Food Summit[219]. This definition, as conceptualised before[220], emphasized the core elements of food security, including physical access to food, economic access through affordability, and the nutritional adequacy of the food consumed, reflecting the belief that food security could be achieved by ensuring an adequate supply of food at the national and global levels, along with mechanisms to ensure that individuals and communities could access and afford the food they needed. In the 1990s, the food security approach primarily aimed at addressing immediate hunger by increasing food production, improving agricultural productivity, and enhancing food availability and access through technological advancements, investments in agriculture, and

[219]Mechlem, K. (2004). Food Security and the Right to Food in the Discourse of the United Nations. *European Law Journal*, *10*(5), 631-648.

[220] As conceptualise at p. 9.

distribution system improvements[221]; however, this approach often overlooked the underlying causes of food insecurity and the long-term sustainability of food systems, not being adequately able to address issues such as poverty, inequality, unsustainable agricultural practices, and environmental impacts. Being the primarily focus the addressing immediate food shortages, often the lack of depth into the systemic issues that perpetuated food insecurity was significant[222] and this is the main reason why the need of developing this approach came up, together with the huge raise of the population growth rate experienced globally in this decade, with significant implications for food security. The increasing global population stressed the food system, challenging food production, distribution, and access. Meeting the growing dietary needs intensified demand and pressure on agriculture for improved productivity. This also led to greater use of land, water, and natural resources, causing environmental issues like deforestation, water scarcity, soil degradation, and biodiversity loss.[223]; moreover, the growing population posed challenges in distributing food effectively and ensuring equitable access and this, along with changes in trade policies, market dynamics, and climate variability, influenced food prices, creating in some cases price volatility and fluctuations, affecting the affordability and accessibility of food for certain populations. Acknowledged the context it is understandable why policy makers, strategists and scholars focused on addressing the imminent crisis and mitigating risks in vulnerable areas. Aligned with the definition provided by FAO, Pingali (2017) emphasized the crucial role of access and availability in addressing food insecurity, recognising that simply increasing food production was not enough to ensure food security. Instead, he stressed the importance of developing strategies to enhance agricultural productivity to meet the growing demand for food[224]; he added that addressing food insecurity required not only ensuring the availability of food but also ensuring economic and physical access to it, clarifying that even if food was available in the market or at the national level, it did not guarantee that individuals or communities facing crisis situations could access and afford it, highlighting strongly the significance of addressing issues related to affordability, distribution, and accessibility.

---

[221] Emadi, M. H., & Rahmanian, M. (2020). Commentary on challenges to taking a food systems approach within the food and agriculture organization (FAO). *Food Security and Land Use Change under Conditions of Climatic Variability: A Multidimensional Perspective*, 19-31.

[222] Barrett, C. B. (2010). Measuring food insecurity. *Science*, *327*(5967), 825-828.

[223] Thrupp, L. A. (2000). Linking agricultural biodiversity and food security: the valuable role of agrobiodiversity for sustainable agriculture. *International affairs*, *76*(2), 265-281.

[224] Pingali, P., Mittra, B., & Rahman, A. (2017). The bumpy road from food to nutrition security–Slow evolution of India's food policy. *Global food security*, *15*, 77-84.

Similarly, Rosegrant (2003)[225] stressed the importance of addressing access and availability in relation to food security, recognizing that increasing agricultural productivity was essential for ensuring sufficient food supply to meet the growing demand and highlighting the need for policies that would improve market efficiency, reduce transaction costs, and enhance rural infrastructure to facilitate the flow of food from producers to consumers. He also stressed the importance of social safety nets and targeted interventions to ensure that vulnerable populations had the economic means to access food during times of crisis.

Nakasone and Torero (2016) emphasized the critical role of access and availability in achieving food security, particularly in developing countries, arguing that addressing these two dimensions is fundamental to ensure that all individuals have physical, social, and economic access to sufficient, safe, and nutritious food removing barriers that prevent people from obtaining food such as poverty, inequality, lack of infrastructure, and limited access to markets[226]. They emphasized the need for policies and interventions that promote inclusive growth, reduce income disparities, and enhance market efficiency to improve access to food for vulnerable populations. Torero also highlights the importance of enhancing agricultural productivity through research, technology adoption, and infrastructure development to ensure sufficient food supply ensuring availability. Tailored approaches are essential, considering the diverse socioeconomic, cultural, and environmental factors influencing food access and availability in different regions and countries.

According to the regional overview of the state of food and agriculture provided by FAO in 1991[227] and 1992[228] and to the African development report 1991-1993 (AFDB), the Sub-Saharan Africa food crisis of that biennium, characterized by widespread famine, acute food shortages, and a sharp decline in agricultural productivity, was a significant event that highlighted the severity of food insecurity in the region during that period, and that thrust the issue of food security into the spotlight, highlighting the pressing need for immediate action[229][230], underscoring the importance of addressing the situation with greater urgency

[225] Rosegrant, M. W., & Cline, S. A. (2003). Global food security: challenges and policies. *Science*, *302*(5652), 1917-1919.and Rosegrant, M. W., Agcaoili-Sombilla, M. C., & Perez, N. D. (1995). *Global food projections to 2020: Implications for investment* (Vol. 5). Diane Publishing.

[226] Nakasone, E., & Torero, M. (2016). A text message away: ICTs as a tool to improve food security. *Agricultural Economics*, *47*(S1), 49-59.

[227] FAO, The state of food and Agriculture, 1991, p.43ss. https://www.fao.org/3/t0496e/t0496e.pdf

[228] FAO, The state of food and Agriculture, 1992, p. 49ss. https://www.fao.org/3/t0656e/t0656e.pdf

[229] P. 42 https://www.fao.org/3/v1790en/v1790en.pdf

[230] Teklu, T. (1996). Food demand studies in Sub-Saharan Africa: a survey of empirical evidence. *Food Policy*, *21*(6), 479-496.

compared to previous efforts[231]. In response to the crisis, the FAO, and other international organizations and governments such as Nigeria[232], Senegal[233] and Burkina Faso[234] launched various initiatives and interventions to address the immediate food needs and to build resilience in the affected communities, to improve agricultural productivity, to enhance food storage and distribution systems, and to provide emergency food assistance to those most in need. In this sense, droughts were a catalyst in the reorientation of agricultural policies[235]. One of the key actions taken by FAO was the implementation of the Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES)[236]. Under EMPRES, FAO established a network of experts and partners who closely monitored and reported on the spread of pests and diseases affecting crops and livestock. This information helped in assessing the magnitude of the crisis, identifying the most affected areas, and coordinating targeted response actions. Additionally, EMPRES facilitated the coordination of emergency response efforts by bringing together national authorities, international organizations, and other stakeholders and by providing a platform for exchanging technical expertise, sharing best practices, and mobilizing resources to address the immediate needs of affected communities. Another factor deeply related with the crisis in the region was political instability: Somalia, for instance, was facing distribution issues due to political complexities and Angola[237] was experiencing civil war. The crisis served as a wake-up call to policymakers, researchers, and organizations involved in food security, underscoring the urgent need to prioritize access to and availability of food[238].

[231] It is important to note that Sub-Saharan countries were major recipients of food aid, with the FAO allocating approximately of 60% of aid specifically for emergency needs[231] in countries affected by droughts. This crisis exposed the vulnerability of the region's agricultural systems and underscored the crucial role of addressing both access and availability in ensuring food security, as highlighted in the World Food Summit report[231] and other relevant documents of that time[231]. Notably, according to FAO statistics, 17 Sub-Saharan African countries were classified as Low-Income Food Deficit Countries (LIFDC)[231] and had the lowest capacity to finance food imports during that period.

[232] Nigeria put a quinquennial ban on wheat import in order to promote domestic production

[233] Senegal aimed for 80% self-sufficiency in food terms

[234] Burkina Faso designed a project to prevent seasonal hunger

[235] In Malawi this was extremely important.

[236] EMPRES was a comprehensive program established by FAO in the early 1990s to monitor, prevent, and respond to transboundary pests and diseases that could have devastating effects on agriculture, food security, and livelihoods. In the context of the food crisis, EMPRES was instrumental in monitoring and controlling plant and animal diseases that further exacerbated the food insecurity situation.

[237] FAO, 1993, C/93 P. 10 https://www.fao.org/3/v1790en/v1790en.pdf

[238] Berry, E., Dernini, S., Burlingame, B., Meybeck, A., & Conforti, P. (2015). Food security and sustainability: Can one exist without the other? Public Health Nutrition, 18(13), 2293-2302.

As an effective awakening response, the FAO and the WHO convened the International Conference on Nutrition (ICN-92) in Rome in December 1992 that yielded significant outcomes in the form of the Rome Declaration on World Food Security and the World Declaration on Nutrition. These declarations emphasized the necessity of addressing food security challenges starting from access and availability and developing strategies and interventions to prevent and mitigate similar crises in the future. ICN-92 acknowledged also the multifaceted nature of food insecurity, recognizing the interconnectedness of problems such as poverty, social inequality, and lack of education, nutritious deficiencies[239]. While these issues were not extensively explored during the conference, they gained more attention and depth in the subsequent decade. A major focus of the conference was the reduction of global hunger, and a notable goal set forth was the eradication of famine, starvation, nutritional deficiencies, and related diseases by the year 2000. This ambitious objective highlighted the urgency and commitment to combatting food insecurity on a global scale. In 1992, the United Nations conference on Environment in Rio de Janeiro, Brazil, highlighted the emerging recognition of the need to shift the approach to food security by incorporating environmental concerns into the equation. [240].

In 1994, the FAO launched the Special Programme for Food Security (SPFS) with the primary objective of contributing to the achievement of food security in Low-Income Food-Deficit Countries (LIFDCs)[241]. This initiative also introduced the concept of LIFDCs, which helped identify and categorize countries facing persistent food deficits and in need of external assistance to meet their food requirements, and therefore it facilitated the allocation of efforts, resources, and support from organizations, stakeholders, and governments to address the specific challenges faced by these countries in improving their food security situation. The SPFS, designed for LIFDCs, aimed to support small-scale farmers and rural communities with technical assistance, training, and market access. It emphasized sustainable agricultural practices, efficient resource utilization, and the development of resilient farming systems, making it a forward-looking and visionary program in terms of shaping the future concept of

[239] Mazzocchi, M., Shankar, B., and Traill, B, The development of global diets since ICN 1992: influences of agri-food sector trends and policies. Rome, FAO. 2012.

[240] McCammon, A. L. (1992). United nations conference on environment and development, held in Rio de Janeiro, Brazil, during 3–14 June 1992, and the'92 Global Forum, Rio de Janeiro, Brazil, 1–14 June 1992. *Environmental Conservation*, *19*(4), 372-373.

[241] Sène, E. H. (2000). Forests and food security in Africa: the place of forestry in FAO's Special Programme for Food Security. *Unasylva (English ed.)*, *51*(202), 13-18.

food security[242]. In the same year, the Food Insecurity and Vulnerability Information and Mapping System (FIVIMS) was established through collaboration between FAO, the WFP, and the International Fund for Agricultural Development (IFAD) with the aim to improve the collection, analysis, and dissemination of food security and vulnerability data to support policy and decision-making processes[243]. It sought to provide accurate and timely data at global, regional, and national levels to enhance understanding of the causes of food insecurity and support effective strategies and interventions to address it.[244].

The North Korea famine, that occurred between 1994 and 1998, lead to a severe food crisis that devastated the country.[245] Research conducted by Goodkind and Noland (2001)[246] highlights that North Korea experienced in the mid-1990s a series of natural disasters, including floods, droughts, and typhoons, combined with abnormal weather patterns characterized by below-average rainfall and above-average temperatures, that impacted agricultural production, exacerbating the food crisis by affecting negatively food production and availability[247]. However, the famine was not solely a consequence of production shortages but also resulted from systemic failures in the distribution and entitlement system, as identified by Sen's concept of "entitlement failure"[248]. According to FAO statistics, between 1995 and 1998, an estimated 2,4 million people died from malnutrition, starvation and related diseases, affecting the most vulnerable groups such as farmers in communities, miners and transport workers[249]. The FAO played an increasingly crucial role in responding to the North Korea famine: recognizing the severity of the crisis, it provided vital technical assistance, expertise, and emergency food aid to address the immediate needs of the population. Collaborating with other organizations, such as the WFP, and major donors, including the United States, the FAO injected substantial grain deliveries into North Korea's domestic economy. Despite working

---

[242] Bohle, H. G., Downing, T. E., & Watts, M. J. (1994). Climate change and social vulnerability: toward a sociology and geography of food insecurity. *Global environmental change*, *4*(1), 37-48.

[243] FAO, FIVIMS, 1994 https://www.fao.org/3/w9990e/w9990e08.htm

[244] Sage, C. (2002). 6. Food security. *Human security and the environment: International comparisons*, 128.

[245] Noland, M., Robinson, S., & Wang, T. (2001). Famine in North Korea: causes and cures. *Economic Development and Cultural Change*, *49*(4), 741-767.

[246] Noland, M., Robinson, S., & Wang, T. (2001). Famine in North Korea: causes and cures. *Economic Development and Cultural Change*, *49*(4), 741-767.

[247] Hassig, R., & Oh, K. (2009). The hidden people of North Korea: Everyday life in the hermit kingdom. Rowman & Littlefield.

[248] In "Development and Freedom" Sen, A. discusses the critical role of food security and entitlements in enhancing people's capabilities and freedoms. He highlights the need for policies that go beyond increasing food production and focus on ensuring equitable access to food, social safety nets, and empowering individuals to exercise their agency in determining their own food choices and well-being.

[249] See footnote 243, p.741.

closely with the North Korean government, the effectiveness of the collaboration was hindered by a lack of transparency and reluctance from the government to accept international assistance. As a proof of that, the Washington Post (2000) reported that only a mere 10% of the aid provided actually reached the hungry population, with another 10% diverted for military purposes, and a staggering 80% claimed by the government[250]. This stark reality sheds light on the fact that focusing solely on access and availability, as emphasized by the FAO and other organizations' policies and strategies in the 1990s, is insufficient to address the broader issue of food security, underscoring the need to consider additional factors, such as political stability and the reliability of national governments. The case of North Korea serves as a clear reminder that addressing the complex issue of food security requires not only efforts to ensure sufficient food supply but also a conducive environment for equitable distribution and accountable governance[251].

In 1996, alongside the significant North Korea Famine, the world witnessed the adoption of the Rome Declaration during the World Food Summit. This landmark document reflected the global commitment to tackle the challenges of food security and ensure equitable access to sufficient and nutritious food for all individuals. The Rome Declaration played a crucial role in shaping the evolution of the food security concept by recognizing the influence of various factors beyond mere access and availability, underscoring the international community's determination to eradicate hunger, promote sustainable agricultural practices, and foster efficient food systems and emphasizing the role of empowering small-scale farmers and vulnerable populations, facilitating fair trade and market access while safeguarding the interests of developing countries, and strengthening cooperation and monitoring mechanisms. By focusing on these aspects, the declaration serves as a guiding framework and a reference point also for subsequent years that broadens the understanding of food security and encourages comprehensive approaches to address its complexities.

The narrow approach to food security in the 1990s had limited scope in addressing the root causes of food insecurity and long-term sustainability. It focused on immediate hunger without considering the social, economic, and environmental factors that contribute to the issue. Crises highlighted the need for a broader approach that considers the interconnections between food security, social aspects, economic viability, and environmental sustainability. This

[250] Washington Post, 9 April 2000, Food Up in North Korea, p. B6.

[251] Margulis, M. E. (2013). The regime complex for food security: Implications for the global hunger challenge. *Global Governance*, *19*, 53.

comprehensive perspective advocates for addressing underlying causes, promoting social inclusivity, and ensuring equitable access to resources and opportunities for achieving food security.

## 2000-2009: Expansion of the Food Security Agenda, Global Food Price Crisis

While the narrow approach to food security in the 1990s played a crucial role in addressing immediate hunger and ensuring food availability and access, it fell short in addressing the broader dimensions of food security, such as the social, economic, and environmental aspects. It laid the groundwork for a shift towards a more comprehensive and holistic understanding of food security that emerged in subsequent years. Especially according to Sen (1986)[252] indeed, famines are not the mere result of lack of food availability, but they are rather due to a variety of economic, social and political factors including poverty, inequality, entitlements, and inadequate access to food, Sen indeed argues that famines are often the result of failures in distribution and entitlement systems, rather than an absolute scarcity of food[253]. According to Sen, addressing the food problem and preventing famines requires in fact a multifaceted approach that goes beyond mere food production. He emphasizes the importance of social and economic policies that address poverty, inequality, and unequal distribution of resources, together with the significance of political freedoms, democratic governance, and an informed public discourse in preventing and responding to food crises effectively[254]. Following this trend, in the 2000s, the food security agenda underwent a significant expansion to include the social factors that influence it.

This shift was largely driven by the adoption of the MDGs in 2000, a set of eight global development goals established by the United Nations, aiming to address various dimensions of poverty and human development by 2015. One of the key MDGs, MDG 1, focused indeed on eradicating extreme poverty and hunger, specifically aiming to halve the proportion of people suffering from hunger by 2015. By setting this target, the MDGs highlighted the strong linkages between income, employment, education, social exclusion, and the complex food system. This recognition emphasized the need to address the social dimensions of food security alongside efforts to alleviate poverty[255] and it brought global attention to the urgent need for

[252] Sen, A. (1996). Fertility and coercion. *U. Chi. L. Rev.*, *63*, 1035.

[253] Sen, A. (1982). *Poverty and famines: an essay on entitlement and deprivation*. Oxford university press.

[254] Sen, A. (1982). The food problem: Theory and policy. *Third World Quarterly*, *4*(3), 447-459.

[255] Kumar, S., Kumar, N., & Vivekadhish, S. (2016). Millennium development goals (MDGS) to sustainable development goals (SDGS): Addressing unfinished agenda and strengthening sustainable development and

comprehensive actions to tackle hunger and malnutrition. It underscored the importance of addressing food insecurity as a critical component of poverty alleviation efforts. This recognition propelled food security to the forefront of the international development agenda. Moreover, the MDGs emphasized the significance of collaboration and partnerships among governments, international organizations, civil society, and the private sector in addressing food security challenges. This recognition of the need for multi-stakeholder engagement laid the foundation for increased cooperation and coordination in tackling food security issues. The MDGs also contributed to a broader understanding of food security beyond mere food availability. They emphasized the importance of nutrition and access to a diverse range of nutritious foods for a healthy and productive life. This shift in focus from food quantity to food quality and nutrition played a crucial role in shaping the evolving approach towards a more comprehensive understanding of food security[256].

In 2002, South Africa faced a severe economic and food crisis, caused by immediate and underlying socioeconomic factors, according to Fadiji and Omokore (2016)[257]: extreme poverty, high unemployment rates, widespread inequalities, HIV and AIDS epidemic, unfavourable climatic conditions, prolonged droughts and a decline in agricultural productivity. Consequently, the availability of food became limited, leading to a significant surge in food prices[258]; the convergence of socioeconomic challenges, climate-related issues, and the burden of disease resulted in a deeply vulnerable food system in South Africa. The underlying problems that triggered the crisis emphasized the significance of the entitlement theory, which stressed that the primary issue was not the absence of food but rather the inability to access it due to economic powerlessness. This awareness prompted a renewed emphasis on addressing the root causes of food insecurity through enhanced social protection programs and the promotion of agricultural resilience. The crisis also had significant social implications, particularly for vulnerable populations such as women, children, and marginalized communities. The lack of access to nutritious food and the prolonged food insecurity had detrimental effects on their health, well-being, and overall development, underscoring the need

partnership. *Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine*, *41*(1), 1.

[256] Sachs, J. D. (2012). From millennium development goals to sustainable development goals. *The lancet*, *379*(9832), 2206-2211.

[257] Fadiji, T. O., & Omokore, D. F. (2016). An overview of the South African food security situation. Journal of Human Ecology, 54(3), 242-250.

[258] Notably, during the latter part of 2001, Malawi witnessed a staggering increase of 150-200% in maize prices, while Zambia declared a state of emergency due to a 250% rise in maize prices within a ten-month period.

for targeted interventions and inclusive policies that address the specific needs and vulnerabilities of these groups. The crisis also highlighted the importance of regional cooperation and coordination in addressing food security challenges. South Africa's interconnectedness with neighbouring countries in terms of trade and food supply chains called for collaborative efforts to ensure a more stable and resilient regional food system, with an indirect call for the strengthening of regional partnerships, knowledge-sharing, and joint initiatives to enhance food security and build resilience across borders. FAO played a pivotal role in addressing the 2002 South Africa crisis by implementing various crucial measures. Recognizing the significance of social protection programs, FAO focused on ensuring that marginalized groups and vulnerable populations received the necessary support. This was achieved through a comprehensive vulnerability assessment of the population, allowing for targeted interventions and assistance where it was most needed. Additionally, FAO prioritized capacity building for local farmers, empowering them to better cope with the crisis and improve their livelihoods and developing tailored strategies to help communities explore alternative income sources and enhance their resilience. This approach aimed to reduce dependence on a single sector or crop, promoting greater economic stability and access to food market. FAO also emphasized the importance of social mobilization and community engagement as effective crisis response mechanism and by actively involving communities in decision-making processes and encouraging their participation, FAO fostered a sense of real ownership and empowerment, enabling more effective and sustainable solutions to be implemented.

As stated by Vogel and Smith (2002), "a focus on food alone as key issue is unhelpful" [259]; this understanding is evident when analysing the South African crisis of 2002. It is during this period that a shift in focus occurred, moving beyond the narrow emphasis on guaranteeing food availability and access, to recognizing the importance of addressing broader societal factors that contribute to food insecurity. The 2002 South African crisis underscored the insufficiency of merely ensuring adequate food supply and access in eradicating hunger and achieving lasting food security[260]. It brought to the forefront the imperative of addressing deeper structural issues, including poverty, inequality, social exclusion, and overall societal vulnerability, as conceptualized by Sen. These underlying factors were identified as critical drivers of food insecurity, necessitating a comprehensive and inclusive approach to address the root causes of

[259]Vogel, C., & Smith, J. (2002). The politics of scarcity: conceptualising the current food security crisis in southern Africa. *South African journal of science*, *98*(7), 315-317.

[260] Watkinson, E., & Makgetla, N. (2002). South Africa's food security crisis. *Report for National Labour and Economic Development Institute, Johannesburg, July*.

the crisis. To address these concerns, there was a growing emphasis on viewing food not merely as a commodity or privilege but as a fundamental human right. The World Food Summit held in 2002 played a significant role in stressing this perspective, acknowledging the right to food as a basic human right and affirmed the commitment of participating nations to eradicate hunger and achieve food security for all. The concept of the right to food emphasizes that every individual should have access to adequate, nutritious, and culturally appropriate food to meet their dietary needs and lead a healthy life and that food security is not just about availability and access but also about ensuring the dignity and well-being of individuals and communities with respect to different minorities, values beliefs and cultures in order to reach the challenging goal of food sovereignty. The empowerment of society and mobilization of various actors, including indigenous communities, women, and family farms, play a pivotal role in realizing the right to food[261] and in shaping food security strategies as emphasised by Christina Blank, Deputy Head of the Permanent Representation of FAO, IFAD, and WFP[262].

The World Food Summit's focus on the right to food reflected a broader shift in thinking and policy approaches during this decade. Governments, international organizations, and civil society increasingly recognized the importance of addressing systemic factors that perpetuated food insecurity, including poverty, social inequalities, gender disparities, and discrimination.

Efforts to promote the right to food encompassed various policy interventions, such as social protection programs, land reform initiatives, agricultural development strategies, and legal frameworks that protected and promoted people's access to food. Additionally, there was a concerted effort to foster inclusive governance systems and participatory democratic political structures, as emphasized by Candice Sakamoto Vianna, alternate permanent representative of Brazil to FAO, IFAD, WFP [263]. These measures aimed to enable marginalized communities to actively participate in decision-making processes concerning food and agriculture. The recognition of the right to food as a fundamental human right has been underscored by experts such as Martin Wolpold Bosien, highlighting its pivotal role in addressing issues of hunger and

[261] Randolph, S., & Hertel, S. (2013). The right to food: A global perspective. *The state of economic and social human rights: a global overview*, *21*.

[262] FAO, 2002, interview https://www.fao.org/hunger/en/

[263] Ibidem.

malnutrition[264]. Despite the recognition of the right to food as a fundamental human right, Clover (2005) points out that it has often been one of the most violated rights[265].

In 2004, the document titled "Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security"[266] was published. The director of the FAO, Jacques Diouf, emphasized the significance of this publication, stating that it represented the first concerted effort by governments to interpret and recommend actions for the realization of an economic, social, and cultural right[267]. The primary objective of the Voluntary Guidelines was to provide practical guidance to nations as they work towards implementing and progressively realizing the right to adequate food within the framework of national food security[268]. These guidelines aim to support the fulfilment of the goals outlined in the World Food Summit Plan of Action[269]. The publication of these Voluntary Guidelines in 2004 marked a significant shift towards a more inclusive societal-wise strategy to achieve the right to food and ensure food security.

---

[264] See footnote 259.

[265] Clover, J. (2005). Land reform in Angola: Establishing the ground rules. *From the Ground Up: Land Rights, Conflict and Peace in Sub-Saharan Africa, African Centre for Technology Studies and the African Security Analysis Programme of the Institute for Security Studies.*

[266]FAO, (2004) Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security. Adopted by the 127th Session of the FAO Council November 2004 https://www.fao.org/3/y7937e/y7937e.pdf

[267] Ibidem.

[268]de Haen, H., General, A. D., & Thomas, J. Putting the Right to Adequate Food into practice–concepts and lessons. *entwicklung & ländlicher raum, Heft*. P. 17

[269] Among the others, guidelines 3, 5, 6 and 7 are particularly relevant in stressing the importance of addressing social factors to effectively tackle food insecurity:

Guideline 3, Social Protection: This guideline emphasizes the importance of implementing social protection programs to ensure that vulnerable populations have access to adequate food. It recommends strategies such as cash transfers, food vouchers, and school feeding programs to address immediate food needs and reduce poverty and inequality.

Guideline 5, Gender Equality and Women's Empowerment: This guideline underscores the need to promote gender equality and empower women in food and agriculture systems. It emphasizes equal access to resources, decision-making power, and opportunities for women to enhance their food security and nutrition outcomes.

Guideline 6, Ensuring Sustainable Livelihoods: This guideline focuses on promoting sustainable livelihoods for rural communities, particularly small-scale farmers, by strengthening their access to productive resources, markets, and financial services. It highlights the importance of supporting agricultural practices that are environmentally sustainable and resilient to climate change.

Guideline 7, Participatory Governance: This guideline emphasizes the importance of participatory governance and the involvement of civil society, including marginalized and vulnerable groups, in decision-making processes related to food security. It calls for inclusive dialogue, consultation, and the engagement of local communities in policy formulation and implementation.

By highlighting the importance of social protection, gender equality, sustainable livelihoods, and participatory governance, the guidelines endorsed by the FAO, recognized that addressing social factors is crucial for effectively tackling food insecurity. The shift in focus from a narrow perspective of food availability and access to a more comprehensive approach encompassing societal factors was prompted by the understanding that achieving food security requires addressing the complex interplay of various determinants, including poverty, inequality, social exclusion, governance, and environmental sustainability, among others.

By broadening the scope beyond food alone, policymakers and practitioners recognized the need to adopt a multidimensional approach to food security. This approach aimed to address the underlying structural and systemic issues that perpetuate food insecurity, rather than solely focusing on short-term interventions to alleviate hunger. The evolving understanding of food security in the 2000s emphasized the importance of empowering individuals and communities, promoting sustainable agricultural practices, improving governance and policy frameworks, and enhancing social safety nets.

The global food price crisis of 2008 was a pivotal event that exposed the vulnerabilities and complexities of the world's food system that FAO had to face. This crisis, characterized by a rapid surge in food prices, had far-reaching implications for food security, particularly in low-income and food-importing countries. It marked a significant shift in the paradigm of understanding and addressing food security, prompting a re-evaluation of existing approaches and the recognition of the need for a more comprehensive and integrated strategy[270]. This crisis was primarily caused by a decrease in agricultural production, with data from the World Bank (2008) indicating a noticeable decline of 1.3% in agricultural production growth since the 1990s[271] that played a significant role in triggering the crisis. Furthermore, the lack of adequate investment in the agricultural sector, especially in developing countries, compounded the problem. Additionally, the scarcity of resources due to climate change and water depletion further contributed to the decline in agricultural production, aggravating the crisis[272]. The global food price crisis of 2008 was also influenced by a significant decline in global stocks of grain. Between 1999-2000 and 2007-2008, there was a significant reduction in global grain stocks, declining from 31.2% of total grain production to 16.5%, as reported by the United

[270] Golay, C. (2010). *The food crisis and food security: Towards a new world food order?* (No. 1, pp. 215-232). Institut de hautes études internationales et du développement.

[271] FAO conference, 2008, p. 180ss.

[272]Sommerville, M., Essex, J., & Le Billon, P. (2014). The 'global food crisis' and the geopolitics of food security. *Geopolitics*, *19*(2), 239-265.

States Department of Agriculture (USDA), that can be attributed to the liberalization of the market, which led to a reduced emphasis on maintaining national grain stocks. The costs associated with maintaining such stocks were deemed avoidable, given the belief that market forces would ensure an efficient and reliable supply of grain[273]. In addition to the factors mentioned earlier, another significant driver of the global food price crisis was the substantial increase in energy costs. During that period, energy costs doubled, resulting in a significant spike in production costs for agricultural commodities. The increase in production costs, estimated to be around 15% to 20%, further added to the overall pressure on food prices[274]. The global food price crisis was further exacerbated by the increased demand from emerging economies such as India and China that experienced significant economic growth, as reflected in their respective GDP growth rates. Scholars Prasad and Mittal (2008) argued that India's pursuit of better nutrition led to increased global food prices[275], while others highlighted the impact of China's rising food demand, commonly referred to as the "China factor." It is worth nothing that the demand for food in these economies is income inelastic, meaning that the quantity of food consumed per capita does not change significantly, but rather the composition of the food basket shifts towards higher-quality and more resource-intensive products ("meatification" of diet and higher protein consumption)[276]. Also, speculation in financial markets played a significant role in driving the global food price crisis: the deregulation of markets, created an environment where investors engaged in speculative activities in commodity futures, leading to artificial demand and price pressure on food and energy commodities such as the case of wheat, corn, soy, and rice, that among other goods, experienced extreme price volatility during this period.

The increase in the demand for grain driven by biofuels production also played a significant role in the global food price crisis. Trostle (2008)[277] highlighted this connection, indicating that the growing demand for biofuels, particularly in the form of ethanol produced from corn and other grains, led to increased competition for these agricultural commodities. This surge in demand for biofuels contributed to higher prices and added pressure on global grain supplies.

[273] Trostle, R. (2008). *Fluctuating food commodity prices: A complex issue with no easy answers* (No. 1490-2016-127721).

[274] Clapp, J., & Cohen, M. J. (Eds.). (2009). The global food crisis: Governance challenges and opportunities. P. 15 ss.

[275] Prasad, I., & Mittal, A. (2008). The Blame Game: Who is Behind the World Food Price Crisis. *The Oakland Institute*.

[276] Weis, T. (2013). The meat of the global food crisis. *The Journal of Peasant Studies*, *40*(1), 65-85.

[277] See footnote 273.

Then, some countries, imposed export bans on grains to ensure domestic food security, further exacerbating the scarcity and price volatility in international markets. The combination of increased biofuels demand and export restrictions added complexity to the crisis.

As a response to the global food price crisis and recognizing the need for a more comprehensive approach, the FAO put significant efforts to address the challenges and promote sustainable solutions. The organization sought to build consensus among member countries, fostering collaboration between the OECD and the G77, to unite nations in their efforts to tackle the crisis and implement effective strategies. The year 2008 marked a turning point as the FAO introduced a comprehensive reform package during its conference in November, outlining a clear plan of action to renew and strengthen its capabilities in responding to the crisis.

This reform package signalled a shift in perspective, going beyond the traditional focus on access, availability, and social factors to include ecological concerns. The FAO acknowledged the interconnectedness of ecological sustainability and food security, recognizing the significant impact of environmental factors such as climate change, land degradation, and water scarcity on agricultural productivity and food availability. By integrating ecological concerns into its initiatives, the FAO aimed to promote sustainable farming practices that safeguarded natural resources and enhanced resilience in agricultural systems. The reform package emphasized the importance of promoting agroecological approaches, such as organic farming, agroforestry, and conservation agriculture[278]. These approaches prioritized natural inputs, reduced reliance on synthetic chemicals, and promoted biodiversity conservation. By adopting such practices, farmers could enhance soil fertility, improve water management, and increase agricultural productivity in a sustainable and environmentally friendly manner.

FAO also played a vital role in addressing the global food crisis by implementing various programs and strategies to support farmers and vulnerable populations, by recognizing the need to assist farmers in adapting to changing environmental conditions and building resilience, by providing technical assistance, knowledge exchange platforms, and capacity building programs to equip farmers with the necessary skills and resources for implementing sustainable farming practices. This focus on resilience-building measures aimed to address the long-term challenges posed by environmental degradation and ensure the sustainability of food production for future generations. Another significant initiative during this period was the

[278] Barrios, E., Gemmill-Herren, B., Bicksler, A., Siliprandi, E., Brathwaite, R., Moller, S., ... & Tittonell, P. (2020). The 10 Elements of Agroecology: enabling transitions towards sustainable agriculture and food systems through visual narratives. *Ecosystems and People*, *16*(1), 230-247.

FAO's Initiative on Soaring Food Prices[279], that aimed to mitigate the impact of high food prices on vulnerable populations through targeted social protection measures and support for smallholder farmers and that recognized the importance of addressing immediate food security needs while also promoting long-term solutions to enhance agricultural productivity and food availability[280]. The 2008 global food crisis raised concerns about geopolitical strategies in food system management. Price spikes led to economic, social, and political upheavals, prompting a re-evaluation of approaches. A growing recognition emerged for a comprehensive approach addressing food security and sustainability, considering environmental, social, and economic dimensions.

**2010-2019: shift to sustainability and to a comprehensive approach**

It is crucial to acknowledge that despite the initial promising steps taken after the 2008 crisis, concerns have been raised by experts like Lester Brown, who advocates for a re-examination of the geopolitical aspects of food[281] and who argues that the implemented measures were insufficient in addressing the fundamental causes of the crisis, resulting in similar crises emerging in subsequent years, particularly between 2011 and 2013. Given the alarming statistic provided by the FAO, stating that approximately 870 million people continue to face food insecurity, it is natural to question the extent and effectiveness of the improvements made thus far. The persistence of such high numbers underscores the urgency to reshape the global architecture of the food system. The crisis of 2008 described as a Malthusian moment for humankind by National Geographic in 2009[282], highlighted the inefficiency of efforts in addressing the specific challenge of feeding an ever-growing population[283]. Food security has emerged as a pivotal topic in discussions surrounding national security, human security, climate change, and global inequality. The FAO recognizes the interconnected nature of these issues and has emphasized the importance of addressing food security in relation to conflict prevention. This was evident in the forum on addressing food insecurity in protracted crises, where the FAO highlighted the link between ensuring food security and promoting stability in

[279] FAO, 2008, FAO's initiative on soaring food prices. Guide for immediate country level action. https://www.fao.org/fileadmin/templates/worldfood/Reports_and_docs/IFSP_guide_immediate_action.pdf

[280] Ibidem, p. 6-15.

[281] Sommerville, M., Essex, J., & Le Billon, P. (2014). The 'global food crisis' and the geopolitics of food security. *Geopolitics*, *19*(2), p. 242.

[282] Bourne, J.K. Jr. (2009). The end of plenty, National Geographic, 215/6.

[283] Charlton, K. E. (2016). Food security, food systems and food sovereignty in the 21st century: A new paradigm required to meet Sustainable Development Goals.

conflict-affected regions. As evident now, food scarcity is able to shape global policies; Barak Obama in the symposium in Washington in 2012 expressed the link between reducing hunger and securing the food system on the one hand and promoting international peace and security on the other hand[284]. In 2012, also the New Alliance for Food Security and Nutrition was established with a focus on strengthening partnerships between governments, private sector actors, and international organizations to drive agricultural development and alleviate hunger in Africa. It emphasized the significance of sustainable agricultural practices and it promoted investments in smallholder farmers to enhance productivity and food availability. In 2015, the adoption of the SDGs further solidified the shift towards a comprehensive approach to food security. The SDGs integrated environmental, social, and economic dimensions, recognizing the importance of ending hunger, achieving food security, improving nutrition, promoting sustainable agriculture (SDG 2) and emphasizing the need to address climate change and its impacts on food systems, aligning with the goals of the Paris Agreement[285]. During this period, two significant crises occurred, further highlighting the relevance of a comprehensive approach. The Horn of Africa drought in 2011 resulted in widespread food insecurity and famine, underscoring the vulnerability of regions to climate-related disasters and the need for resilience-building measures. Similarly, the Ebola crisis in 2017 highlighted the complex relationship between health and food security, as the outbreak disrupted agricultural activities and food supply chains in affected regions.

In the decade 2010-2019 the FAO shift in the focus can be summarised with the formula: from People to Planet for People. Charlton (2016)[286] argues that in the 21st century, the emphasis should move beyond the crucial goals of ending poverty and hunger, as seen in the MDGs, to prioritize environmental sustainability and resource management. This shift is necessary to address the urgent challenges of planetary disruption and climate change, ensuring a sustainable future for both people and the planet. In line with this perspective, it became relevant the step made by the Paris Agreement in 2015 that recognised the centrality of climate change issues in the sustainability debate. Climate change, considered sometimes as a manifestation of the Malthusian ecological catastrophe or the revenge of geography, has placed significant pressure on global systems. In this sense it is clear that food security must be seen

[284] Obama, B. 18 May 2012, Remarks by the President at Symposium on Global Agriculture and Food Security Ronald Reagan Building, Washington, D.C. https://obamawhitehouse.archives.gov/the-press-office/2012/05/18/remarks-president-symposium-global-agriculture-and-food-security

[285] Robiou du Pont, Y., Jeffery, M. L., Gütschow, J., Rogelj, J., Christoff, P., & Meinshausen, M. (2017). Equitable mitigation to achieve the Paris Agreement goals. *Nature Climate Change*, *7*(1), 38-43.

[286] See footnote 283.

within a broader context that includes agroecological concerns and environmental issues. On one hand, agriculture and food systems heavily rely on ecological services such as soil and water. However, they also contribute significantly to environmental change, creating a vicious circle of cause and effect. The interconnectess between food production and environmental crisis is undeniable. With the projected increase in the world's population to 9 billion by 2050, food production will need to increase by 70-100%. This heightened demand exacerbates the existing environmental crises, including climate change, deforestation, land degradation, pollution, and biodiversity loss. As a striking example, approximately 85% of consumptive water is used in food production[287]. Therefore, any disruption in food systems directly impacts the agroecological equilibrium, creating a symbiotic relationship. The equation is clear: a food crisis implies an agroecological crisis, and vice versa. An illustrative example of the interconnectedness between food crisis and environmental systems crises can be observed in Cambodia: attempting to address poverty-related food insecurity, the government implemented a large-scale intensification of rice production but, as studied by Biggs et al. (2015)[288], this approach had significant repercussions on the Tonle Sap lake, which serves as a vital socio-ecohydrological system.

The sustainability of dietary patterns emerges as a crucial next step in the 21st century towards reducing humanity's environmental print impact and ensuring a sustainable food system. Notably, beef-based diets have been recognized as particularly environmentally costly, mainly due to their high-water consumption and significant contribution to livestock greenhouse emissions[289]. To increase food production adequately while addressing these concerns, a shift away from meat-centric diets becomes imperative. The SDGs have played a pivotal role in exerting pressure to develop future iterations of dietary guidelines that encompass sustainability considerations. A crucial challenge in achieving this objective lies in addressing key issues within the food system, such as the significant distances between production and consumption centres. The fishery market between the United States and Japan serves as a poignant example, highlighting the complexities and drawbacks of long-distance food trade. Climate change experts have expressed grave concerns regarding this issue and have advocated

[287] Sage, C. (2011). *Environment and food*. Routledge. P. 127,184.

[288] Biggs, E. M., Bruce, E., Boruff, B., Duncan, J. M., Horsley, J., Pauli, N., ... & Imanari, Y. (2015). Sustainable development and the water–energy–food nexus: A perspective on livelihoods. *Environmental Science & Policy*, *54*, 389-397.

[289] 40% of the all-livestock greenhouse emissions.

for food localism and the attainment of food sovereignty[290]. According to Haughes (2015)[291], there is also a pressing need for nutrient professionals to assist nations and individuals in achieving the objective of sustainable nutrition practices. In line with these concerns and efforts, notable initiatives such as the Scaling Up Nutrition (SUN) Movement, 2010[292] and the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries, and Forests, 2012[293] implemented by the FAO have broadened the prevailing paradigm, contributing to a shift in perspective, and emphasizing the importance of local food systems, responsible land governance, and sustainable resource management in achieving food security and sustainability goals.

The shift towards a comprehensive approach to food security is driven by the recognition of interconnected environmental, social, and economic dimensions. Initiatives like the New Alliance for Food Security and Nutrition and the SDGs support collaborative efforts for long-term resilience. Holistic food security involves sustainable farming, climate resilience, better access to nutritious food, and addressing poverty and inequality. Continued collaboration among stakeholders and evidence-based policies are crucial. Priority areas include sustainable agriculture, support for smallholder farmers, rural infrastructure, social protection, and integrating food security into development agendas.

[290] Rosset, P. Food Sovereignty and the Contemporary Food Crisis. *Development* **51**, 460–463 (2008). https://doi.org/10.1057/dev.2008.48

[291] In Charlton, K. E. (2016). Food security, food systems and food sovereignty in the 21st century: A new paradigm required to meet Sustainable Development Goals.

[292] The FAO actively participated in the SUN Movement, a global initiative that brings together governments, civil society, and other stakeholders to combat malnutrition promoting social sustainable and multi-sectoral approaches to improve nutrition outcomes.

[293] The FAO developed these guidelines to promote secure access to land, fisheries, and forests, particularly for marginalized groups. They emphasize the importance of social equity, gender equality, and participatory decision-making in land governance.

# Chapter 5: Examining Institution Interactions

After conducting an in-depth analysis of the reports from UNDP, ECOSOC to the UNGA, some of the annual reports on the State of Food and Agriculture provided by FAO, and relevant secondary literature, this research now enters its crucial following phase. The primary objective of this phase is to determine the existence of a causal mechanism between these institutions (G1 and G2) or to examine whether the observed influence can be attributed to factors such as knowledge exchange, normative influence, collaborative initiatives, policy alignment, and coordination[294] without being to establish a causal mechanism.

If initially there was an optimistic expectation that a clear causal mechanism connecting the shift in paradigm within the source institutions and the target institution could be identified, upon close examination of the documents and evidence, it became apparent that the dependent variable, paradigm shift within the FAO, is influenced other than by the shift in paradigm within the source institution, by a multitude of complex and hardly controllable factors, making it challenging to definitively attribute causality between the paradigm shift within the two groups of institutions. The implementation of the process tracing methodology has provided valuable insights and perspectives throughout the first steps of the research: in fact the conceptualization, played a pivotal role in establishing a clear understanding of the relevant factors based on scholarly expertise that was essential also in comprehending the intricacies of the concepts under investigation and in clarifying how they influence the transition from one paradigm to another; then the dynamic journey within the source institutions (G1) and the target institution (G2), presented compelling evidence of the evolution of food security over three decades into food sustainability direction by a developing focus on the factors explained in the first step, showing how the concept has expanded and transformed. Moving forward, in the following paragraphs, this phase of the research will explain what the initial expected linking mechanism between the shift in paradigm within the source institutions (G1) and the target institution (G2) was, and then it will clarify the findings after the analysis conducted.

[294] See chapter 2, p.32ss.

## Cause effect relationship x→y

Having identified the relevant source institutions and given the target institution in chapter 2, the next stage is to analyse the cause-effect relationship between x, the actions and perspectives of the source institutions (G1) and y, the ones of the target institution (G2), within the paradigm shift. Through the examination of the reports, documents, actions, policies, and decisions of the source institutions during the dynamic evolution of the concept of food security[295], a critical analysis can be developed to determine the extent to which these institutions (G1) have influenced the behaviour, perspective and approach of the target institution (G2). This analysis seeks to ascertain whether the influence of the source institutions was necessary in shaping the behaviour, perspective or approach of the target institution or if the target institution would have exhibited similar behaviour, perspective or approach even in the absence of this influence. In other words, the aim is to determine whether the actions and behaviours within the source institutions have a causal effect on the behaviour and decision-making processes of the target institution. To establish causality, several elements can contribute to make the analysis clearer[296]. Subsequency, which emphasizes that the shift in perspective or policy within the target institution should occur after the event within the source institution. This temporal relationship strengthens the causal connection between the two. Reproducibility and consistency of the causal mechanism are also crucial: if the same pattern of influence is consistently observed between the source and target institutions, it strengthens the validity of the causal relationship. The presence of multiple instances of the causal mechanism adds robustness to the analysis. Coherence is another important factor, which involves ensuring alignment and uniformity among the factors involved as provided in the conceptualization, in the first chapter of the research. When the identified factors and mechanisms align with each other and with existing theories or frameworks, it enhances the coherence of the causal argument.

Building upon the insights gained from the previous chapters of the research, the focus now shifts towards examining the specific points of influence and understanding how the occurrences within the source institutions may have potentially influenced the paradigm shift within FAO.

[295] Ibidem.

[296] Kurki, M. (2008). *Causation in international relations: reclaiming causal analysis* (Vol. 108). Cambridge University Press.

During the period from 1990 to 1999, both the source institutions and the target institution, shared a common focus on addressing the basic needs of food security, including factors such as access, availability, usage, and stability[297]. Additionally, they shared also the pressing concern of LIFDCs and LDCs as more vulnerable areas, together with the need for a better monitoring programme[298]. However, a discrepancy arises when examining the approaches taken by the source institutions and FAO during this time. On the one hand the source institutions displayed already a forward-thinking approach that emphasized the importance of ensuring stability and conflict management in the context of food security, as observed in the various annual reports from UNDP and ECOSOC that highlight the focus of the discourse within the source institution to the need to address not only the physical and economic access to food but also the broader social aspects to ensure human security, such as stability, conflict resolution and management[299]. These institutions recognized the interconnections between food security and broader issues of social, political, and economic stability. In contrast, FAO's policies and actions during this period reflected a narrower approach focused primarily on defining basic standards and ensuring physical and economic access to food. This can be seen in the definition of food security provided by FAO during the World Food Summit in 1996[300], which primarily emphasized access to food and did not explicitly address the broader dimensions of human and social security but focused more on the basic urgent action to be taken to address hunger and ensuring sufficient food supply. This discrepancy suggests a divergence in perspectives and priorities between the source institutions and FAO during the 1990s. While the source institutions already recognized the importance of a comprehensive approach to food security that considers stability and conflict management, FAO's focus remained still largely confined to the narrower aspects of access to food, as exemplified by the sub-Sahara crisis management from FAO, prioritizing the efforts toward allocating huge emergency aid to solve primarily the urgent situation rather than considering the longer-term perspective[301].

Another noteworthy point to mention is the divergence in the perception of food security as a right between the source institutions and the target organization. Within the source institutions, the concept of food security was already understood as a fundamental right, incorporating

[297] See Chapter 3, p. 40, 64.
[298] As shown in Chapter 4, p. 63, 68.
[299] See Chapter 3, p. 40, 41 and Chapter 4, p. 79.
[300] See footnote 1.
[301] See Chapter 3, p. 38-46 and Chapter 4, p. 64-70.

Amartya Sen's ideas on human capabilities and entitlements. This perspective was reflected in their reports and policy documents, which emphasized the importance of addressing social, economic, and political factors to ensure food security for all[302]. However, within the target organization, FAO, this recognition of food security as a right and the incorporation of Sen's ideas were not immediately apparent. Instead, FAO's focus during the period under analysis was primarily on addressing the narrower aspects of access to food, as previously discussed[303]. It was only in later years that FAO began to align its perspective with the broader understanding of food security as a right and incorporate Sen's ideas more explicitly[304]. This difference in the recognition and incorporation of Sen's ideas between the source institutions and the target organization highlights the evolving nature of the discourse on food security and the gradual convergence of perspectives over time. It also underscores the influence of the source institutions in shaping the understanding and approach to food security within the target organization, as their ideas and recommendations gradually permeated the discourse and policy development within FAO.

It is reasonable and expected to observe this initial discrepancy, considering the essentiality of temporality (subsequency) in determining causality. In the case of FAO, it took some time for the organization to align with the perspective of the source institutions, particularly in terms of addressing the broader social factors associated with food security. This alignment became more apparent in the years following 2000[305]. As FAO continued to evolve and adapt its approach, it began to incorporate a more comprehensive understanding of food security that encompassed not only physical access to food, but also the social and political dimensions highlighted by the source institutions. Over time, in fact, FAO has gradually recognized the importance of incorporating social factors into the food security discourse, aligning with the evolving paradigm within the source institutions. This can be observed in FAO's expansion of its agenda and its integration of elements such as social protection and inclusion of minorities in the early 2000s. A notable example of this adaptation can be seen in FAO's management of the crisis in South Africa in 2002, where the organization addressed social factors as part of its response[306]. Furthermore, FAO's recognition of food as an inviolable right was not initially

[302] See Chapter 3, p. 38, 40, 47, 52, 56 and Chapter 4, p. 74.
[303] See Chapter 5, p. 84-85.
[304] See Chapter 4, p. 74-75.
[305] See Chapter 4, p. 71ss.
[306] Hickey, S., & Seekings, J. (2020). Who should get what, how and why. *The politics of social protection in Eastern and Southern Africa*.

emphasized, as was done by the source institutions, but it became a significant concern when the voluntary guidelines to support the progressive realization of the right to adequate food in the context of food security were introduced in 2004[307].

Another shift in focus occurred in conjunction with the adoption of the MDGs by the UNGA in 2000. Following this milestone, themes such as income, democracy, food price insecurities and volatility, climate change, bio-environment, and gender disparities gained increasing relevance within the source institutions' discussions and reports. In parallel, in the same period of time, FAO began to emphasize the social aspects within the Food Regime Complex that had been stressed in the previous decade by the source institutions. While sustainable solutions had been a fundamental part of the discourse within the source institutions since the beginning of the new century, FAO specifically highlighted the promotion of sustainable solutions as part of its reform program only in 2008. Similarly, FAO's recognition of the importance of addressing food price spikes and insecurities, which had been emphasized in reports from the 1990s and early 2000s[308], became more pronounced in 2008 with the launch of the Soaring Food Prices Initiative. This initiative was a response to the global food crisis and highlighted the need for a comprehensive and inclusive approach to the food security regime. It signalled FAO's efforts to bridge the discourse gap with the source institutions and align its priorities with the evolving global food security agenda. In November 2008, FAO implemented a reform package aimed at enhancing the organization's effectiveness, responsiveness, and impact in addressing global food security challenges and promoting agricultural development. This reform package was designed to align FAO's strategies and actions with the pressing concerns outlined in the Millennium Development Goals, including the promotion of sustainable solutions. By undertaking these reforms, FAO aimed to improve its ability to tackle food security issues in a more comprehensive and impactful manner, in line with the source institutions and the evolving global development priorities and the needs of its member states stressed by the UNGA in the MDGs Declaration in 2000.

During the second decade analysed (2000-2009), the source institutions placed a growing emphasis on addressing gender-based and minority disparities in land access. This concern stemmed from the recognition that women and minorities, despite their significant

---

Antonopoulos, R. (2013). Expanding social protection in developing countries: a gender perspective. *Levy Economics Institute at Bard College Working Paper*, (757).

[307] See Chapter 4, p. 75.

[308] See Chapter 3, p. 40ss., particularly as evident from the stress on affordability in reports from 1993, 2001 and 2002.

contributions to food production, often faced inequalities in accessing and owning land. The source institutions highlighted this issue through various reports and declarations. The Beijing Declaration and Platform for Action adopted by the UNGA in 1995 laid the foundation for addressing gender disparities in land access. However, the focus on this issue became more pronounced in the early 2000s, as evidenced by reports such as the UNDP/2003 report stressing rural women empowerment[309], the ECOSOC/2005 round table discussions on gender equality and women's empowerment[310], and the 2007 reports from both UNDP and ECOSOC emphasizing gender equality, human rights, and fundamental freedoms. These discussions built upon the principles outlined in the Beijing Declaration, highlighting the need for gender equality and empowerment in land-related matters. FAO's recognition of these gender disparities came later, with the mention of the theme in 2004 through Guideline 5[311] of the "Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security". However, FAO's emphasis on this issue became more prominent in subsequent years. In 2010, FAO launched the Gender and Land Rights Database, an online resource that provides information on women's land rights, legal frameworks, customary practices, and challenges they face in accessing and owning land. This database aims to raise awareness about gender disparities in land access and support gender-responsive land governance. In 2012, FAO released the "Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries, and Forests in the Context of National Food Security"[312], that also emphasized the importance of gender equality and women's empowerment in relation to land tenure by recognizing the significant role that women play in agriculture and food security and provided recommendations and principles to ensure equitable access to land and natural resources, particularly for women and other vulnerable groups.

Since the early years of the 2000s, the source institutions, UNDP, ECOSOC, began emphasizing the close relationship between health and food security. They recognized that access to nutritious food is crucial for maintaining good health and well-being. This emphasis highlighted the need to address not only hunger and malnutrition but also the quality and safety of food. Furthermore, the source institutions also recognized the importance of water security for achieving food security, acknowledging that reliable access to water for agricultural purposes is essential for sustainable food production. This understanding reflected the growing

[309] See Chapter 3, p. 48.
[310] See Chapter 3, p. 54
[311] See footnote 269, Guideline 5, Gender Equality and Women's Empowerment.
[312] See Chapter 4 p. 82.

recognition of the interlinkages between water resources and food systems[313]. In addition, the source institutions expressed concerns about the environmental challenges facing the global food system. These concerns were consistent with the principles and objectives outlined in the CBD established in 1992[314]. While these concerns were already present in the source institutions, the integration and adoption of these themes into FAO's policies and initiatives took place, again, at different times. One notable program initiated by FAO is the Water Scarcity Initiative, which was launched in 2012[315]. Another significant program is the Climate Change and Food Security Program, which started in the early 2000s but gained relevance in the later years of the decade[316]. Additionally, FAO launched the Biodiversity and Ecosystem Services Program[317] in 2008, which gained solid footing over time.

During the last decade, a distinct divergence emerged between the trajectory of the source institutions and that of the target institution, FAO, in addressing food security. The source institutions advanced towards a more comprehensive and inclusive approach, incorporating long-term sustainable technological solutions and considering a multitude of factors. This shift was marked by key milestones such as the Paris Agreement, the adoption of the SDGs, and the establishment of the 2030 Agenda. The source institutions also emphasized the importance of education and normative frameworks, evident in their organization of various Conference of the Parties (COPs) as platforms for discussions[318]. On the other hand, the target institution, FAO, was still in the process of catching up with the trajectory set forth by the source institutions. Although FAO had already embraced a people-centred approach to food security, as demonstrated by its focus on ensuring access to sufficient and nutritious food as prescribed by the MDGs, it had yet to fully integrate sustainability considerations. However, with the

[313] See Chapter 3, p. 50-52.

[314] The CBD Convention aims to promote the conservation and sustainable use of biodiversity, recognizing the crucial role it plays in maintaining ecosystems and supporting food production. See timeline p.

[315] Water Scarcity Initiative, FAO, 2012, focuses on improving water management in agriculture to enhance water security and promote sustainable food production. It encompasses measures such as the adoption of water-saving technologies, efficient irrigation management, and the implementation of integrated water resource management approaches.

[316] Climate Change and Food Security Program, FAO, 2001, addresses the environmental challenges associated with climate change and their impact on food security. It assists countries in adapting to climate change, mitigating its effects, and promoting climate-resilient agricultural practices.

[317] Biodiversity and Ecosystem Services Program, FAO, 2008, recognizes the importance of biodiversity for sustainable food production and ecosystem resilience. It promotes the conservation and sustainable use of biodiversity in agriculture and seeks to integrate biodiversity considerations into food security policies and practices.

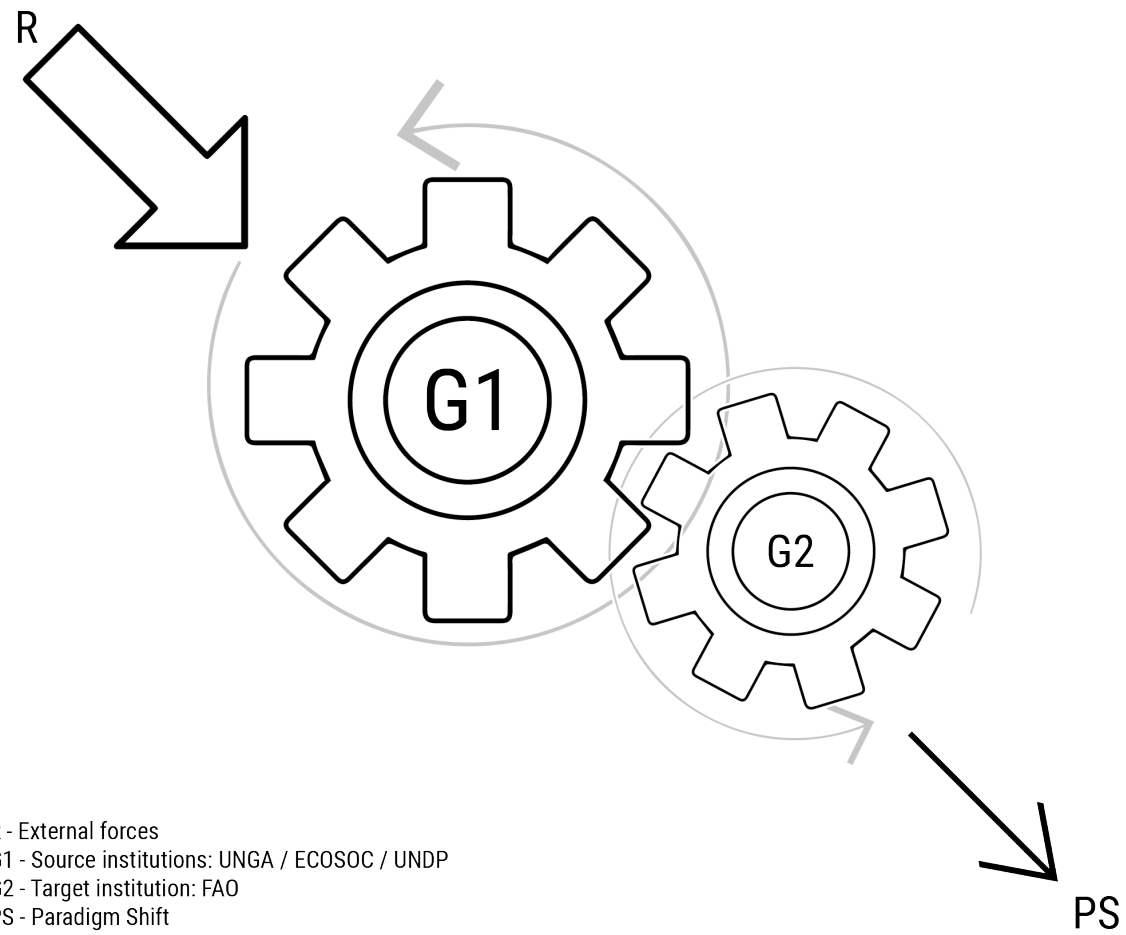
[318] See Chapter 3, p. 57

implementation of the SDGs, FAO started to incorporate environmental aspects into its actions as well, recognizing the need for sustainable resource management and addressing issues such as in food production. Furthermore, FAO began to highlight the importance of nutritional patterns in its programs, as evidenced by the establishment of the New Alliance on Food Security and Nutrition in 2012[319]. This shift reflected a growing recognition of the interplay between nutrition, health, and food security.

All this considered, it is possible to say that the source institutions played a pioneering role in recognizing the significance of new factors within context of food security. Their early emphasis on these broader but interrelated themes preceded the adoption of similar perspectives by FAO, illustrating a clear subsediquency in the evolution of ideas and priorities. As time progressed, FAO demonstrated a gradual alignment with the shifting paradigm established by the source institutions. This alignment was characterized by a coherent incorporation of the factors involved in the paradigm shift. This subsediquency and coherence in the shift highlight the causal relationship between the source institutions and FAO, with the former serving as catalysts for change and the latter following suit. The source institutions' early recognition and emphasis on these factors influenced FAO's behaviour, perspective, and approach, ultimately leading to a more comprehensive and sustainable approach to food security within the target institution.

[319] See Chapter 4, p. 80

**Which causal mechanism was expected at first? How was it supposed to work?**




R - External forces
G1 - Source institutions: UNGA / ECOSOC / UNDP
G2 - Target institution: FAO
PS - Paradigm Shift

[320]

At the beginning of the research, the envisioned mechanism to link the paradigm shift within the source institutions and the target institution resembled a system of gears set in motion by an initial external force. This force was represented by various external occurrences such as crises, climate shocks, conflicts, political situations, and food production shortages. These events served as catalysts that prompted the source institutions to respond to the emerging challenges and pressures they faced. The urgency of these situations, combined with factors like potential blame from other international organizations or society at large, compelled the

[320] Graphic explanation of the expected mechanism.

source institutions to internalize the issues and prioritize them in their discourse, policymaking, and agenda-setting processes. As these themes gained increasing relevance within the source institutions, they moved closer to the forefront of the institutional agenda, triggering a change in perspective and approach. This shift was a response to the pressing needs and evolving discourse surrounding the identified challenges: the source institutions recognized the importance of addressing these new themes and of incorporating them into their strategies, policies, and decision-making processes; meanwhile, the target institution, FAO, became involved in the discourse and discussions surrounding these themes due to its role as a specialized body within the United Nations, and being capable of collecting valuable data and sharing knowledge. This involvement represented a cognitive interaction between the source and target institutions, as FAO joined the conversation and contributed with its expertise and resources. However, due to bureaucratic processes and institutional dynamics, there was often a time lag before FAO fully integrated the themes into its agenda-setting process. Once engaged in the discourse, FAO considered the new themes and their implications, eventually aligning its perspective with that of the source institutions. This alignment resulted in a subsequent change in strategies, policies, and programs within FAO. The mechanism mirrored the process observed in the source institutions, as FAO adapted its approach to address the emerging challenges and incorporate the identified themes into its framework.

### What is the method that is on the other hand realised in the end?

After the study conducted, with the help of process tracing methodology[321], it has been acknowledged that the expectation before mentioned even if not completely wrong, was simplistic.

Gehring and Oberthür offer a wide-ranging, detailed and realistic explanation of the interactions between source and target institutions that collectively contribute to the eventual causality mechanism between the paradigm shift within the source institution and the subsequent shift within the target institution, encompassing cognitive interaction commitment-based interaction, behavioural interaction, and impact level interaction[322]. Their framework provides a nuanced understanding of how these interactions shape and influence the dynamics between the institutions, shedding light on the multifaceted processes that lead to changes in

[321] See footnote 77.
[322] Ibidem.

perspectives, approaches, and policies.[323] Based on the theoretical framework presented earlier in this study, the interactions that are possible to trace in linking between ECOSOC, UNDP, and FAO are cognitive interactions and impact level interactions.

Cognitive interaction, characterized by the exchange and sharing of ideas, knowledge, and perspectives between institutions, plays a crucial role in the context of interactions between ECOSOC, UNDP, and FAO, as evident through the dissemination of information collected in reports, shared in discussions, and attached policy documents. Indeed, being the ECOSOC, and UNDP platforms where new themes and factors are introduced and discussed, they lead to calls for new strategies and policy recommendations and they provide the arena for addressing global challenges and shaping the discourse on various issues. On the other hand, FAO, as a specialized UN body, contributes to this cognitive interaction by providing more specific and in-depth information, through its expertise, data, numbers, and statistics, enhancing the development of concepts and enriches the understanding of food security and related topics. This mutual learning approach between the source and target institutions, contributes to the collective understanding of evolving challenges within the food security realm in a synergistic manner. The study conducted reveals a notable utilization of data and information provided by FAO in the reports of ECOSOC and UNDP. These reports demonstrate how the data, statistics, and information shared by FAO are employed to assess and emphasize the policy recommendations and calls made by the source institutions[324].

Impact level interaction, on the other hand, refers to the tangible effects and outcomes that result from the interactions between institutions. This type of interaction is triggered by the influence of the source institution on the target institution, leading to a modification of the target institution's ultimate governance target. It involves a functional interdependence of targets, resulting in a synergistic effect. In the context of this study, the impact level interaction is observed in the progressive alignment of FAO's policies and initiatives with the perspectives and priorities set forth by ECOSOC, and UNDP. This alignment is evident in the incorporation of sustainable solutions, gender equality policies, women's and minorities' empowerment, and environmental considerations within FAO's programs and strategies. The impact level interaction is further demonstrated through concrete actions taken by FAO, such as the launch of the Gender and Land Rights Database and the implementation of programs addressing water scarcity and climate change, as previously discussed. These actions reflect the influence and

[323] See footnote 92.

[324] One of the many examples can be here the graph at p. 268 of the UNDP report from 2000, that in column 9 indeed, uses data from 1999 provided by FAO.

impact of the source institutions on shaping FAO's agenda and approach to addressing food security challenges.

It is clear at this stage of the study that a strong interactional interconnectedness exists between the two groups analysed and as framed above, this interactional relationship follows a delated but repeated scheme that allow to think that further development will happen within the target institution in current time and further. The fact that within the target institution the paradigm shift happen with some temporal distance can be seen in a twofold manner: if on the one hand it can be perceived as a lack of efficiency of the target institution in its responses, on the other hand time lag allow the specialised institution to create deeply accurate, articulated and tailored solutions to face the events and the evergreen development of the issues involved in the topic, guaranteeing in the best scenarios, a long term of the solutions and strategies developed[325]. Also, the source institutions play the role of presenting actors that more than developing strategies, driving the common attention on a nuance of the topic, bringing it on the table of discussion and subsequently on the agenda of the other institutions, prompting in this way the evolution of the concept itself. In the case study, the target institution shares similar enhanced and transformative topics as the source institutions. They demonstrate a deeper understanding and develop strategies and programs in collaboration with the national government and specialized bodies to address the situation.

After examining these interactions between source and target institutions within the paradigm shift, the question arises as to whether a valid causal inference can be made between X and Y, as previously discussed. The analysis has revealed several important factors that contribute to this determination. Firstly, temporal subsequency, plays a crucial role in establishing a causal mechanism. The interactions between source and target institutions exhibit a temporal order, with shifts in perspectives and priorities occurring first in the source institutions and subsequently in the target institution. This temporal sequence strengthens the plausibility of a causal relationship. Furthermore, coherence in the timeframe and in the factors involved can be observed. The interactions occur consistently over time, with similar patterns and actors involved in multiple instances. This reproducibility and the consistency of the causal mechanism add robustness to the analysis and support the existence of a causal relationship. However, it is important to acknowledge the presence of confounding factors within the food security system and its associated regime. These uncontrollable factors introduce complexities

[325] Shellman, S. M. (2004). Time series intervals and statistical inference: The effects of temporal aggregation on event data analysis. *Political Analysis*, *12*(1), 97-104.

and potential biases that make it challenging to establish a direct cause-and-effect relationship. The interconnected nature of the food security system and the influence of various external factors further complicate the determination of a causal mechanism. This point has also been acknowledged through conversation with FAO employees in Rome; the extreme complexity of the topic, the variety of different external forces that can create disbalances and disequilibrium, the short-notice or unannounced events that happen, make the whole picture hard to generalise, and according to the answer received, the latest events such as COVID19, are clear examples of this immense impact and interconnectedness of a variety of factors involving food security itself.

Considering the presence of these many confounding factors and the inherent complexity of the food security system, it is difficult to definitively state that there is a causal mechanism between X and Y. The existence of other influencing factors beyond the interactions studied raises the possibility that Y may not be solely caused by the mechanisms expressed in the interactions. In conclusion, while the analysis provides valuable insights and suggests the presence of certain interactions, it is important to approach the determination of a causal mechanism with caution. Additional evidence and access to restricted documents that contain specific details and internal deliberations could help establish a clearer understanding of the causal processes at play. A more comprehensive evaluation, including these additional sources, would be required to definitively establish the existence of a causal relationship between the source and target institutions. Therefore, while the existing analysis supports a potential causal inference, it is acknowledged that further evidence and examination of restricted documents would be necessary to confirm the presence of a causal mechanism within the food security system and its associated regime.

# Conclusion

This thesis delves into the evolution of the food system paradigm, tracing its progression from a narrow focus on food security in the 1990s to a more comprehensive approach encompassing social and environmental factors, alongside sustainable strategies. The primary focus lies on FAO as the organization under study, with the hypothesis exploring whether its paradigm shift is influenced by similar changes in the source institutions, indicating a potential causal link.

Through an in-depth analysis of reports from the source institutions and relevant literature on FAO's shift, the study identifies interactions between G1 and G2, suggesting a plausible influence on FAO's paradigm shift. However, the complex nature of the framework and the existence of other possible factors make it challenging to establish a direct causal relationship.

The findings of this research provide valuable insights into the dynamics of the food system and the interconnectedness of key institutions within the paradigm shift. The interactions between the source institutions (ECOSOC and UNDP), and the target institution (FAO) showcase a process of mutual learning, where the exchange of ideas, knowledge, and perspectives enriches the understanding of evolving challenges and informs policy development. The impact level interaction observed in the alignment of FAO's policies and initiatives with the priorities set forth by the source institutions demonstrates the functional interdependence of targets. FAO's incorporation of sustainable solutions, gender equality policies, women's and minorities' empowerment, and environmental considerations reflects the influence and impact of the source institutions on shaping FAO's agenda and approach to addressing food security challenges. However, it is essential to acknowledge the limitations of this study. The complexity of the food security system and the presence of potential confounding variables necessitate caution in making definitive causal inferences. While the evidence points to interactions and influence, attributing FAO's paradigm shift solely to the source institutions' changes requires further investigation and access to additional information that may not be readily available.

As this research raises as many questions as it answers, it opens new avenues for further exploration. Future studies could delve deeper into the mechanisms driving the interactions between institutions and explore how specific external events and global challenges influence paradigm shifts within the food system. Investigating the role of other relevant actors and stakeholders in shaping the food security discourse would provide a more comprehensive understanding of the interconnectedness within the food system paradigm.

This thesis serves as a steppingstone towards comprehending the evolving landscape of food security and sustainability. The interplay of institutions, the nuances of interactions, and the complexities of the food system underscore the need for ongoing research and collaboration to develop effective and lasting solutions. By continuously seeking knowledge and fostering dialogue, we can strive towards a more sustainable, inclusive, and resilient food system that addresses the needs of present and future generations.

# Bibliography


Adcock, R., & Collier, D. (2001). Measurement validity: A shared standard for qualitative and quantitative research. American political science review, 95(3), p. 530-531.

Adeomi, A. A., Fatusi, A., & Klipstein-Grobusch, K. (2022). Food security, dietary diversity, dietary patterns and the double burden of malnutrition among school-aged children and adolescents in two Nigerian states. Nutrients, 14(4), 789.

Alinovi, L., Mane, E., & Romano, D. (2010). Measuring household resilience to food insecurity: application to Palestinian households. Agricultural survey methods, 341-368.

Allen, P., Van Dusen, D., Lundy, J., & Gliessman, S. (1991). Integrating social, environmental, and economic issues in sustainable agriculture. American Journal of Alternative Agriculture, 6(1), 34-39.

Alston, P. (1984). International law and the human right to food. In The Right to Food (pp. 9-68). Brill Nijhoff.

Alter, K. J., & Meunier, S. (2006). Nested and overlapping regimes in the transatlantic banana trade dispute. Journal of European Public Policy, 13(3), 362-382.

Altieri, M. A., Farrell, J. G., Hecht, S. B., Liebman, M., Magdoff, F., Murphy, B., ... & Sikor, T. O. (2018). Toward sustainable agriculture. In Agroecology (pp. 367-379). CRC Press.

Antonopoulos, R. (2013). Expanding social protection in developing countries: a gender perspective. Levy Economics Institute at Bard College Working Paper, (757).

Avenburg, A., Gerring, J., & Seawright, J. (2023). How do social scientists reach causal inferences? A study of reception. Quality & Quantity, 57(1), 257-275.

Barkin, Samuel. 2008. "'Qualitative' Methods?" In Qualitative Methods in International Relations: A Pluralist Guide, edited by Agata Klotz and Deepa Prakash, 211-220. London: Palgrave Macmillan.

Barrett, C. B. (2010). Measuring food insecurity. Science, 327(5967), 825-828.

Barrios, E., Gemmill-Herren, B., Bicksler, A., Siliprandi, E., Brathwaite, R., Moller, S., ... &

Beach, D., & Pedersen, R. B. (2019). Process-tracing methods: Foundations and guidelines. University of Michigan Press.

Bennett, A. (2010). Process tracing and causal inference, chapter 10, process tracing tests, conclusion.

Bennett, A., & Checkel, J. T. (Eds.). (2015). Process tracing. Cambridge University Press, p. 21;123;207.

Bernauer, T. (1995). The effect of international environmental institutions: how we might learn more. International Organization, 49(2), 351-377.

Berry, E., Dernini, S., Burlingame, B., Meybeck, A., & Conforti, P. (2015). Food security and sustainability: Can one exist without the other? Public Health Nutrition, 18(13), 2293-2302. doi:10.1017/S136898001500021X

Biermann, F., Kanie, N., & Kim, R. E. (2017). Global governance by goal-setting: the novel approach of the UN Sustainable Development Goals. Current Opinion in Environmental Sustainability, 26, 26-31.

Biggs, E. M., Bruce, E., Boruff, B., Duncan, J. M., Horsley, J., Pauli, N., ... & Imanari, Y. (2015). Sustainable development and the water–energy–food nexus: A perspective on livelihoods. Environmental Science & Policy, 54, 389-397.

Blokhuis, H. J., Jones, R. B., Geers, R., Miele, M., & Veissier, I. (2003). Measuring and monitoring animal welfare: transparency in the food product quality chain. Animal welfare, 12(4), 445-455.

Bohle, H. G., Downing, T. E., & Watts, M. J. (1994). Climate change and social vulnerability: toward a sociology and geography of food insecurity. Global environmental change, 4(1), 37-48.

Bourne, J.K. Jr. (2009). The end of plenty, National Geographic, 215/6

Breen, C. (2007). The Necessity of a Role for the ECOSOC in the Maintenance of International Peace and Security. Journal of Conflict & Security Law, 12(2), 261-294.

Cadieux, K. V., & Slocum, R. (2015). What does it mean to do food justice? Journal of political ecology, 22, 1.

Calicioglu, O., Flammini, A., Bracco, S., Bellù, L., & Sims, R. (2019). The future challenges of food and agriculture: An integrated analysis of trends and solutions. Sustainability, 11(1), 222.

Capone, R., Bilali, H. E., Debs, P., Cardone, G., & Driouech, N. (2014). Food system sustainability and food security: connecting the dots. Journal of Food Security, 2(1), 13-22.

Charlton, K. E. (2016). Food security, food systems and food sovereignty in the 21st century: A new paradigm required to meet Sustainable Development Goals.

Checkel, J. T. (2008). Process tracing. Qualitative methods in international relations: A pluralist guide, 114-127.
Chenail, R. J. (2011). Ten Steps for Conceptualizing and Conducting Qualitative Research Studies in a Pragmatically Curious Manner. Qualitative Report, 16(6), 1722-1730.
Clapp, J., & Cohen, M. J. (Eds.). (2009). The global food crisis: Governance challenges and opportunities
Clendenning, J., Dressler, W. H., & Richards, C. (2016). Food justice or food sovereignty? Understanding the rise of urban food movements in the USA. Agriculture and Human Values, 33, 165-177.
Clover, J. (2005). Land reform in Angola: Establishing the ground rules. From the Ground Up: Land Rights, Conflict and Peace in Sub-Saharan Africa, African Centre for Technology Studies and the African Security Analysis Programme of the Institute for Security Studies.
Collier, D. (2011). Understanding process tracing. PS: political science & politics, 44(4), 823-830.
Coulson, H., & Milbourne, P. (2021). Food justice for all?: searching for the 'justice multiple'in UK food movements. Agriculture and Human Values, 38, 43-58.
de Haen, H., General, A. D., & Thomas, J. Putting the Right to Adequate Food into practice–concepts and lessons. entwicklung & ländlicher raum, Heft. P. 17
Dev, S. M., & Sharma, A. N. (2010). Food security in India: Performance, challenges and policies.
Doherty, R., Ensor, J. E., Heron, T., & Prado Rios, P. A. D. (2019). Food systems resilience: towards an interdisciplinary research agenda. Emerald Open Research.
Emadi, M. H., & Rahmanian, M. (2020). Commentary on challenges to taking a food systems approach within the food and agriculture organization (FAO). Food Security and Land Use Change under Conditions of Climatic Variability: A Multidimensional Perspective, 19-31.
Ericksen, P. J. (2008). Conceptualizing food systems for global environmental change research. Global environmental change, 18(1), 234-245.
Evangelista, M. (2014). Explaining the Cold War's end. Process Tracing, 153-185. Chapter 6.
Fadiji, T. O., & Omokore, D. F. (2016). An overview of the South African food security situation. Journal of Human Ecology, 54(3), 242-250.
Flanders, D., Wiek, A., Carmichael, J., ... & Cohen, S. (2009). Making local futures tangible—synthesizing, downscaling, and visualizing climate change scenarios for participatory capacity building. Global Environmental Change, 19(4), 447-463.
Forssell, S., & Lankoski, L. (2015). The sustainability promise of alternative food networks: An examination through "alternative" characteristics. Agriculture and human values, 32, 63-75.
Gehring, T. (1994). Dynamic International Regimes: lnstitutions for International Environmental Governance.
Gehring, T., & Oberthür, S. (2009). The causal mechanisms of interaction between international institutions. European journal of international relations, 15(1).
George, A. L., & Bennett, A. (2005). Case studies and theory development in the social sciences. mit Press.
Glennan, S. S. (1996). Mechanisms and the nature of causation. Erkenntnis, 44(1), p. 52.
Golay, C. (2010). The food crisis and food security: Towards a new world food order? (No. 1, pp. 215-232). Institut de hautes études internationales et du développement.
Guiné, R. D. P. F., Pato, M. L. D. J., Costa, C. A. D., Costa, D. D. V. T. A. D., Silva, P. B. C. D., & Martinho, V. J. P. D. (2021). Food Security and Sustainability: Discussing the Four Pillars to Encompass Other Dimensions. Foods, 10(11), 2732.
Harmon, A., Lapp, J. L., Blair, D., & Hauck-Lawson, A. (2011). Teaching food system sustainability in dietetic programs: need, conceptualization, and practical approaches. Journal of Hunger & Environmental Nutrition, 6(1), 114-124.
Hassig, R., & Oh, K. (2009). The hidden people of North Korea: Everyday life in the hermit kingdom. Rowman & Littlefield.
Hergesell, J., Baur, N., & Braunisch, L. (2020). Process-Oriented Sampling. Canadian Review of Sociology/Revue canadienne de sociologie, 57(2), 265-285.
Hickey, S., & Seekings, J. (2020). Who should get what, how and why. The politics of social protection in Eastern and Southern Africa.
Ho, D. E., Imai, K., King, G., & Stuart, E. A. (2007). Matching as nonparametric pre-processing for reducing model dependence in parametric causal inference. Political analysis, 15(3), 199-236.

Hodbod, J., & Eakin, H. (2015). Adapting a social-ecological resilience framework for food systems. Journal of Environmental Studies and Sciences, 5, 474-484.
Hurd, I. (2008). After anarchy: legitimacy and power in the United Nations Security Council. Princeton University Press. P. 93-121.
Jordan, A., & Lenschow, A. (2010). Environmental policy integration: a state of the art review. Environmental policy and governance, 20(3), 147-158.
Keohane, R. O. (1988). International institutions: Two approaches. International studies quarterly, 32(4), p. 380-381.
Kirwan, J., & Maye, D. (2013). Food security framings within the UK and the integration of local food systems. Journal of Rural Studies, 29, 91-100.
Kurki, M. (2008). Causation in international relations: reclaiming causal analysis (Vol. 108). Cambridge University Press.
Lamont, C. K. 2015. Research Methods in International Relations. Los Angeles: Sage.
Lang, T., & Barling, D. (2012). Food security and food sustainability: reformulating the debate. The Geographical Journal, 178(4), 313-326.
Lee, B. X., Kjaerulf, F., Turner, S., Cohen, L., Donnelly, P. D., Muggah, R., ... & Gilligan, J. (2016). Transforming our world: implementing the 2030 agenda through sustainable development goal indicators. Journal of public health policy, 37, 13-31.
Margulis, M. E. (2013). The regime complex for food security: Implications for the global hunger challenge. Global Governance, 19, 53.
Mazzocchi, M., Shankar, B., and Traill, B, The development of global diets since ICN 1992: influences of agri-food sector trends and policies. Rome, FAO. 2012.
McCammon, A. L. (1992). United nations conference on environment and development, held in Rio de Janeiro, Brazil, during 3–14 June 1992, and the'92 Global Forum, Rio de Janeiro, Brazil, 1–14 June 1992. Environmental Conservation, 19(4), 372-373.
McDonald, B. L. (2010). Food security. Polity.
McEntee, J. (2010). Contemporary and traditional localism: a conceptualisation of rural local food. Local Environment, 15(9-10), 785-803.
Mechlem, K. (2004). Food Security and the Right to Food in the Discourse of the United Nations. European Law Journal, 10(5), 631-648.
Michel-Villarreal, R., Hingley, M., Canavari, M., & Bregoli, I. (2019). Sustainability in alternative food networks: A systematic literature review. Sustainability, 11(3), 859.
Miles, E. L., Andresen, S., Carlin, E. M., Skjærseth, J. B., & Underdal, A. (2001). Environmental regime effectiveness: confronting theory with evidence. Mit Press.
Mingst, K. A., Karns, M. P., & Lyon, A. J. (2022). The United Nations in the 21st century. Routledge. P.28-40.
Misselhorn, A., Aggarwal, P., Ericksen, P., Gregory, P., Horn-Phathanothai, L., Ingram, J., & Wiebe, K. (2012). A vision for attaining food security. Current opinion in environmental sustainability, 4(1), 7-17.
Montes, M., & Lunenborg, P. (2016). Trade Rules and Integration Trends and Human Development. Background paper for Human Development Report.
Nakasone, E., & Torero, M. (2016). A text message away: ICTs as a tool to improve food security. Agricultural Economics, 47(S1), 49-59.
Neumayer, E. (2003). Weak versus strong sustainability: exploring the limits of two opposing paradigms. Edward Elgar Publishing.
Nilsson, M., Pallemaerts, M., & Von Homeyer, I. (2009). International regimes and environmental policy integration: introducing the special issue. International Environmental Agreements: Politics, Law and Economics, 9, 337-350.
Noland, M., Robinson, S., & Wang, T. (2001). Famine in North Korea: causes and cures. Economic Development and Cultural Change, 49(4), 741-767.
Oberthür, S. (2009). Interplay management: enhancing environmental policy integration among international institutions. International Environmental Agreements: Politics, Law and Economics, 9, 371-391.
Oberthür, S., & Gehring, T. (2011). Institutional interaction. Managing Institutional Complexity; Oberthür, S., Stokke, OS, Eds, 25-58.

Pingali, P., Alinovi, L., & Sutton, J. (2005). Food security in complex emergencies: enhancing food system resilience. Disasters, 29, S5-S24.
Pingali, P., Mittra, B., & Rahman, A. (2017). The bumpy road from food to nutrition security–Slow evolution of India's food policy. Global food security, 15, 77-84.
Pinstrup-Andersen, P. (2009). Food security: definition and measurement. Food security, 1(1), 5-7.
Pollard, C. M., & Booth, S. (2019). Food insecurity and hunger in rich countries—it is time for action against inequality. International journal of environmental research and public health, 16(10), 1804.
Prasad, I., & Mittal, A. (2008). The Blame Game: Who is Behind the World Food Price Crisis. The Oakland Institute.
Randolph, S., & Hertel, S. (2013). The right to food: A global perspective. The state of economic and social human rights: a global overview, 21.
Rice, P. L., & Ezzy, D. (1999). Qualitative research methods: A health focus. Melbourne, Australia. P. 275
Robiou du Pont, Y., Jeffery, M. L., Gütschow, J., Rogelj, J., Christoff, P., & Meinshausen, M. (2017). Equitable mitigation to achieve the Paris Agreement goals. Nature Climate Change, 7(1), 38-43.
Rohlfing, I. (2012). Case studies and causal inference: An integrative framework. Springer.
Ronald Reagan Building, Washington, D.C. https://obamawhitehouse.archives.gov/the-press-office/2012/05/18/remarks-president-symposium-global-agriculture-and-food-security
Rosegrant, M. W., & Cline, S. A. (2003). Global food security: challenges and policies. Science, 302(5652), 1917-1919.and Rosegrant, M. W., Agcaoili-Sombilla, M. C., & Perez, N. D. (1995). Global food projections to 2020: Implications for investment (Vol. 5). Diane Publishing.
Rosset, P. Food Sovereignty and the Contemporary Food Crisis. Development 51, 460–463 (2008).
Sachs, J. D. (2012). From millennium development goals to sustainable development goals. The lancet, 379(9832), 2206-2211.
Sage, C. (2002). 6. Food security. Human security and the environment: International comparisons, 128.
Schlosberg, D. (2013). Theorising environmental justice: the expanding sphere of a discourse. Environmental politics, 22(1), 37-55.
Schulterbrandt Gragg, R., Anandhi, A., Jiru, M., & Usher, K. M. (2018). A conceptualization of the urban food-energy-water nexus sustainability paradigm: modeling from theory to practice. Frontiers in Environmental Science, 6, 133.
Sen, A. (1982). Poverty and famines: an essay on entitlement and deprivation. Oxford university press.
Sen, A. (1982). The food problem: Theory and policy. Third World Quarterly, 4(3), 447-459.
Sen, A. (1996). Fertility and coercion. U. Chi. L. Rev., 63, 1035.
Sène, E. H. (2000). Forests and food security in Africa: the place of forestry in FAO's Special Programme for Food Security. Unasylva (English ed.), 51(202), 13-18.
Seufert, P. (2013). The FAO voluntary guidelines on the responsible governance of tenure of land, fisheries and forests. Globalizations, 10(1), 181-186.Shaw, A., Sheppard, S., Burch, S.,
Shellman, S. M. (2004). Time series intervals and statistical inference: The effects of temporal aggregation on event data analysis. Political Analysis, 12(1), 97-104.
Shiel, C., Leal Filho, W., do Paço, A., & Brandli, L. (2016). Evaluating the engagement of universities in capacity building for sustainable development in local communities. Evaluation and program planning, 54, 123-134.
Sommerville, M., Essex, J., & Le Billon, P. (2014). The 'global food crisis' and the geopolitics of food security. Geopolitics, 19(2), 239-265.
Spröte, W. (2000). ECOSOC–Economic and Social Council. In A Concise Encyclopedia of the United Nations (pp. 110-112). Brill Nijhoff.
Stonehouse, D. P. (2003). A holistic systems approach to addressing sustainability issues in the agri-food sector. The Journal of agricultural education and extension, 9(1), 33-42.
Taylor, P., & Groom, A. J. R. (Eds.). (2000). United Nations at the millennium: the principal organs. A&C Black. P.5.
Teklu, T. (1996). Food demand studies in Sub-Saharan Africa: a survey of empirical evidence. Food Policy, 21(6), 479-496.
Thrupp, L. A. (2000). Linking agricultural biodiversity and food security: the valuable role of agrobiodiversity for sustainable agriculture. International affairs, 76(2), 265-281.

Timmer, C. P. (2015). Food security and scarcity: why ending hunger is so hard. University of Pennsylvania Press.
Tracy, Sarah J. 2013. Qualitative Research Methods: Collecting Evidence, Crafting Analysis, Communicating Impact. Chichester: Wiley-Blackwell, 21-36 (Chapter 2)
Trostle, R. (2008). Fluctuating food commodity prices: A complex issue with no easy answers (No. 1490-2016-127721).
Underdal, A. (1992). The concept of Regime Effectiveness'. Cooperation and conflict, 27(3), 227-240.
Van Berkum, S., Dengerink, J., & Ruben, R. (2018). The food systems approach: sustainable solutions for a sufficient supply of healthy food (No. 2018-064). Wageningen Economic Research.
Viana, C. M., Freire, D., Abrantes, P., Rocha, J., & Pereira, P. (2022). Agricultural land systems importance for supporting food security and sustainable development goals: A systematic review. Science of the total environment.
Vogel, C., & Smith, J. (2002). The politics of scarcity: conceptualising the current food security crisis in southern Africa. South African journal of science, 98(7), 315-317.
Watkinson, E., & Makgetla, N. (2002). South Africa's food security crisis. Report for National Labour and Economic Development Institute, Johannesburg, July.
Weiler, A. M., Hergesheimer, C., Brisbois, B., Wittman, H., Yassi, A., & Spiegel, J. M. (2015). Food sovereignty, food security and health equity: a meta-narrative mapping exercise. Health policy and planning, 30(8), 1078-1092.
Weis, T. (2013). The meat of the global food crisis. The Journal of Peasant Studies, 40(1), 65-85.
Young, Oran R. (2002) The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale. Cambridge, MA: MIT Press, p. 23; 83–109.
Zurek, M., Ingram, J., Sanderson Bellamy, A., Goold, C., Lyon, C., Alexander, P., ... & Withers, P. J. (2022). Food system resilience: concepts, issues, and challenges. Annual Review of Environment and Resources, 47, 511-534.