



## DIRECTOR'S LETTER

Dear Delegates,

My name is Miller McCraw, and I am proud to be your chair for McKenna MUN's Food and Agriculture Organization General Assembly this year! I have competed in Model UN for six years now and am excited to run what has recently become one of my primary areas of study. I am currently a sophomore here at Claremont McKenna studying Environment, Economics and Politics. In addition to being a member of CMC's Model UN team, I am also a manager at the Roberts Environmental Consulting Center, a member of the Gould Humanities Center, an art fellow for the CMC Art Council, and the grant manager of the Pomona College Organic Farm.

Despite not holding the glitz and glamor that existential threat-focused UN committees hold, the Food and Agriculture Organization is the international guardian of one of the most important human rights we hold; the right to food. Ensuring a cooperative global system that can provide individuals with the food they need to survive and thrive is an essential part of any global body, and as members of the FAO you will be charged with fulfilling such a Herculean task. Our discussions this weekend will focus on two chronic issues the FAO continues to struggle with: finding ways to promote and suggest implementation of sustainable fishing

practices and addressing gaps in current food production that exacerbate malnutrition. In the face of these nuanced and complex issues, I am excited to see what creative and innovative solutions you all develop to address these problems. If there are any questions regarding this background guide or accessibility issues please email me at [mmccraw24@cmc.edu](mailto:mmccraw24@cmc.edu).

## INTRODUCTION/HISTORY OF COMMITTEE

The FAO, or Food and Agriculture Organization of the United Nations, was developed by the UN in October of 1945, making it the oldest specialized committee present at the United Nations. The committee's Latin motto, *fiat panis*, "let there be bread,"<sup>1</sup> is a constant reminder of the FAO's founding principle; to lead multilateral initiatives to improve food security and proper nutrition for all nations of the world. Since its initial founding, the issues the FAO has faced have changed drastically, from fighting locust outbreaks through the Desert Locust Programme less than seven years after its founding<sup>2</sup> to the creation of World Bee Day in 2018 to combat the global extinction of keystone pollinators. 194 states make up the membership of the FAO. The organization has active operations in at least 130 of those nations. Although involved in addressing all 17 of the United Nations' Sustainable Development Goals<sup>3</sup> (SDGs), the UN's second SDG of achieving zero worldwide hunger primarily falls under the FAO's purview. This specialized organization is primarily interested in increasing food stability for the chronically hungry, reducing food loss and waste in all sectors of food production and consumption, reducing infectious disease from human interaction with animals, creating mutually beneficial trade relationships to strengthen food security, increasing gender parity and female opportunity

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<sup>1</sup> "FAO in North America," Food and Agriculture Organization

<sup>2</sup> "About FAO," Food and Agriculture Organization

<sup>3</sup> "Sustainable Development Goals," Food and Agriculture Organization

in the agricultural sector, and mitigating and adapting to the effects of climate change on food production with climate smart agriculture, to name a few of its functions.<sup>4</sup>

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<sup>4</sup> "Our Priorities," FAO in North America

## Topic 1: Development of responsible fisheries and aquaculture

### INTRODUCTION

It is hard to overstate the importance of fish and aquatic foodstuffs in the global diet. 20% of the daily protein of 3.1 billion people comes from fish, representing 17% of the world's meat consumption.<sup>5</sup> In anywhere from densely populated fishing centers to isolated rural regions with a strongly fish-based food system, the high amount of nutrients found in fisheries represents an important contributor to diets all over the world.<sup>6</sup> The 200 million tons of fish caught every year in all bodies of water for human consumption<sup>7</sup> is important to the UN's goal of meeting increased food demand by 2050<sup>8</sup>, but is far from a limitless resource. The increase in prevalence of destructive fishing practices, expanding industrialization, and increased need for seafood to meet food demand in growing countries has pushed fisheries to their limits, depleting fish populations faster than they can repopulate in many critical marine areas. The sustainable and responsible use of these fisheries is a requirement of creating replenishable food sources, and an

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<sup>5</sup> "What does the world eat?" Sustainable Fisheries

<sup>6</sup> Jerry R. Schubel, Kimberly Thompson, "Farming the Sea: The Only Way to Meet Humanity's Future Food Needs," GeoHealth, Advancing Earth and Space Science

<sup>7</sup> "Interesting Ocean Facts," Save the Sea Organization

<sup>8</sup> Joe McCarthy, "Here's What It Will Take to Feed 10 Billion People by 2050," Global Citizen

important focus of the FAO for this committee session. As an important clarification, “fisheries” in this background guide refers to the total aggregate of fishing stocks around the world in either oceans, rivers, lakes, and other bodies of water. We realize this focus is enormous, and we have no expectation that in these short few days you will find a solution to all of the nuanced issues that result in overfishing. Solving regional differences and complexities with one international resolution is impossible, and we fully recognize that. We hope, however, that the breadth of this topic will provide room for a variety of resolutions and creative solutions rather than several documents that essentially recommend the same policies. You are free to explore your own interests and subsets of this problem, and propose solutions to what your country may consider the most critical portion of responsible fishery management. Narrowing the topic too specifically may exclude certain nations from participating fully in the discussion of that aspect of overfishing, and as such we have decided to keep the subject on the broader side.

## TOPIC HISTORY

Fishing is one of the oldest recorded human activities. Archeological records from as far as 40,000 years ago have uncovered fish remains and symbology of fishing activities in human art.<sup>9</sup> The oldest recorded example of human fishing was spearfishing, a process in which barbed

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<sup>9</sup> Jitendra Kumar, “INTRODUCTION AND HISTORY OF FISHERIES,” Mangalore College of Fisheries

poles were used to skewer fish and other marine animals. Many of these early fishing economies primarily used rivers and river deltas for their fishing, some of which expanded to seals, shellfish, and more species from the Paleolithic era to the New Stone Age. In 3500 BCE, Egypt became the global center of fishing innovation, with the net, line, and fishing rod all discovered in archeological records.<sup>10</sup> The salting of fish also became popular at this time.

As the technology of fishing developed, so did the social systems that governed it. In many places, the division of fisheries was implemented by law. In Polynesia, King Kamehameha III divided fisheries among commoners, land-owners, and the monarchy, using the courts to solve disputes and enforce boundaries.<sup>11</sup> Ancient China also participated in this trend, dividing up the Yangtze and Pearl River for supplementing rural diets and transplantation of wild fish into farming regions.<sup>12</sup> Even Europe wasn't exempt from the trend; feudal lords during the High Middle Ages in the southeast of the continent began to exert legal control over fisheries, restricting their once open usage. The advancing abilities of technology at the time also allowed for the creation of artificial ponds, which were stocked with fish and used for the first form of what is now referred to as fish farming. Up until the 15th century, this form of subsistence fishing was primarily how humans obtained their marine food. It was not until the development of deep sea fishing in the 15th century and the use of herring drifters that the international fish

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<sup>10</sup> "The history of fishing," Alimentaryum

<sup>11</sup> Dennis Kawaharada, "Introduction: Hawaiian Fishing Traditions," University of Hawaii

<sup>12</sup> Nathanael Hishamunda, Rohana P. Subasinghe, "AQUACULTURE DEVELOPMENT IN CHINA, THE ROLE OF PUBLIC SECTOR POLICIES" Food and Agriculture Organization



trade came into existence. Herring drifters were ocean ships developed by the Dutch that dragged long nets behind them to catch marine life and created production abundance that made fish trade beyond local markets a real possibility. Trawling, a particularly destructive form of fishing in which nets drag along the ocean floor, was also invented in the 17th century, paving the way for new forms of industrialized fishing.

Northwest Europe and England are the sites of some of the first recorded examples of overfishing around the year 1000 CE.<sup>13</sup> Both the size and population of freshwater fish stocked near European shores saw a sharp decline following increases of fishing and pollution, and represents one of the first historical examples of human depletion in the face of growing food demand. A similar example of overfishing occurred in 19th century North America.<sup>14</sup> As early as the 800's, migrants from Southeastern Europe and Scandinavia began turning to fishing in the Northeast of what is now the United States as a form of subsistence income, due to its high production for an industry with relatively low skill and capital barriers of entry, and this trend compounded as European migrants to the continent surged. Trout populations in the Northeast Atlantic became dangerously low due to overfishing, and the United States government took steps to investigate the decreasing returns of trout fishing. The Commission on Fish and Fisheries was developed by the United States government in 1871, acting as the precursor to the U.S. and Marine Biological Laboratories developed in the 20th century that performed some of

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<sup>13</sup> Alister Doyle, "Overfishing began 1000 years ago: study," Reuters, ABC News

<sup>14</sup> William F. Royce, "Historical Development of Fisheries Science and Management," NOAA

the first recorded investigatory studies into the phenomenon of the “tragedy of the commons,” an issue in which a common pool resources with high accessibility but limited stock is depleted over time.<sup>15</sup> As technology and food demand have risen congruently, so has the prevalence of overfishing. Current estimates state 34.2% of global fisheries are currently overfished, a percentage that has steadily increased since the 1980’s.<sup>16</sup> A fishery is considered “overfished” by the FAO if its stock is less than 80% of its ideal biomass. If this trend continues, fisheries could reach almost total collapse by 2050, with almost all inland and oceanic fisheries depleted by 90% .<sup>1718</sup> Historically, in striving to provide food for populations all over the globe, long-term catching sustainability has taken a backseat to short-term food security, and this lack of balance has fueled the overfishing crisis we discuss this weekend.

The growing demand for fish is an easily identifiable cause for the international increase in fishing. Since 1990, global demand for fish and marine food products has increased by +527% from a combination of population growth, consumer preference, and industrialization. Fishery production has only increased by 14% during the same time period, leaving a huge gap between demand and supply for these foodstuffs. Bycatch also contributes in a major way to the depletion of fish stocks. Bycatch is the unintentional catching or killing of fish or other marine life through

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<sup>15</sup> Daniel K. Benjamin, “Fisheries are Classic Example of the ‘Tragedy of the Commons,’” Property and Environment Research Center

<sup>16</sup> “How many fisheries are overfished, and what does that mean?” Sustainable Fisheries

<sup>17</sup> Szabolcs Szecsei, “32 Sad Overfishing Statistics,” Petpedia

<sup>18</sup> “Seafood could collapse by 2050,” The Safina Center

industrialized fishing methods.<sup>19</sup> Marine life may be entangled by discarded nets, hooked by undersea fishing equipment, etc., and 40% of fish stock exhaustion is caused by this phenomenon. These two issues have historically been major causes of fishery decline. Although these two phenomena are still prevalent and should be a major focus of all sustainable fishery resolutions, the issue has become more nuanced as it weaves into the complexities of a globalized 21st century world.

## THE ISSUES

Fish is a staple food source, and the protection of its long-term production is essential to protecting food security for growing countries. Marine life is also critical for global biodiversity, as sea animals participate in a variety of natural processes that benefit the planet. With nearly half the world relying on fishing and marine foodstuffs for a fifth of their daily protein and nearly a billion solely reliant on aquatic foodstuffs as their source of protein, a balance must be struck between sustainability and immediate food security.

In order to address overfishing, a variety of topics should be discussed. The first is the relationship between increasing food demand and increasing fishery strain. Demographic shifts in growing nations and the change of consumer preferences can only further inflate the demand

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<sup>19</sup> “Understanding Bycatch,” NOAA

for oceanic food, a relationship that has continued to fuel the overfishing crisis. For developing nations, expansion of commercial aquaculture not only increases food production but also acts as a lucrative export and a driver of the national economy. Although conservation may be a noble goal, these economic priorities are also a major consideration. This barrier has historically created friction between conservation efforts and food security initiatives. The abiotic factors affecting fisheries should also be considered. Ocean acidification, or the creation of carbonic acid from a combination of water and rising CO<sub>2</sub> levels, has a notable impact on hard-shelled marine life.<sup>20</sup> Climate change and rising greenhouse gas concentrations are also increasing global temperatures, and oceans are no exception. 83% of global carbon is cycled through the ocean, and 93% of the excess heat from temperature change to the climate has been absorbed by the ocean.<sup>21</sup> Regions with a higher increase in temperatures are estimated to lose up to 40% of their fish population by 2050, highlighting the severity of this cycle particularly for growing nations.<sup>22</sup> Rising ocean temperatures also lead to coral bleaching, a process in which coral reefs lose their algae from high temperatures.<sup>23</sup> Coral reefs are hotspots of biodiversity, and the habitat loss from coral bleaching are a major strain on fish populations. In river regions, more direct human intervention through river engineering also has notable effects on fish population. The

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<sup>20</sup> Lina Hansson, "IAEA Supports New Research on the Impacts of Ocean Acidification on Seafood," IAEA

<sup>21</sup> "Climate change and fishing," Marine Stewardship Council

<sup>22</sup> William W. Cheung, Daniel Pauly, "Large-scale redistribution of maximum fisheries catch potential in the global ocean under climate change," India Environmental Portal

<sup>23</sup> Lorin Hancock, "Everything You Need to Know about Coral Bleaching—And How We Can Stop It," World Wildlife Fund

construction of dams can disrupt the migratory patterns of fish that rely on geographic movement for their survival, and pollution from these constructions can seep into aquatic environments.<sup>24</sup> Dams and hydroelectric plants in the Yangtze, Mekong, Congo and Amazon rivers have all placed huge fisheries at risk, all of which large swathes of local populations rely on for food access and local economic growth.<sup>25</sup> Beyond ecological issues, economic and social inequalities are also driving overfishing. Unprotected or exhausted fisheries tend to be centered in overpopulated, low-income regions, many of which perpetuate cyclical poverty and economic depression.<sup>26</sup> Protection of fisheries has been linked to economic revitalization, and should also be considered in this committee's efforts. Overfishing has been linked to malnutrition in coastal regions that rely on marine life for protein and vitamins, and lack of this food source can create serious dietary issues for the regions that use them.<sup>27</sup> Poor fishery management provides the opportunity for other black market activity to prosper as well. A dark feedback loop has been recognized between modern-day slavery and overfishing.<sup>28</sup> As fishing populations decrease, the amount of labor required to maintain the same levels of fish production increases, leading to a system that incentivizes finding cheap and exploitable manpower. This increase in coerced labor is a combination of poor fishery management and lack of economic opportunity for laborers.

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<sup>24</sup> Gerd Marmulla, "Dams, fish and fisheries: Opportunities, challenges and conflict resolution," FAO Fisheries Department

<sup>25</sup> "Destructive Dams," World Animal Foundation

<sup>26</sup> Olivia DeSmit, "Protecting fisheries can fight poverty: study," Conservation International

<sup>27</sup> Savannah Huls, "Sustainable Fishing to Fight Poverty," Borgen Magazine

<sup>28</sup> Taylor McNeil, "Overfishing and Modern-Day Slavery," TuftsNow

Traffickers will place children or young adults in debt bondage, forcing them to work in unsafe and underpaid working conditions out of lopsided contractual obligations, blackmail, and force. Social issues like these have historically been ignored in UN resolutions, and only recently has actual data recognizing this cycle been published. It should not be ignored in your resolutions. Government fishing subsidies have also been blamed for marine population decline. Of the \$35 billion globally directed to fishing equipment by nations, approximately \$20 billion is estimated to contribute directly to overfishing.<sup>29</sup> Subsidies for industrialized fishing are intended to boost food production and stability, but can also lead to the overexploitation of already strained national fisheries. The need for a balance between current food security and long-term resource sustainability again becomes obvious.

Although overfishing is a global problem, several regions are of primary note when discussing this issue. The Mediterranean is a global hotspot of fishery exhaustion, with more than 90% of its fisheries being fished beyond their reproduction abilities.<sup>30</sup> Local officials have been charged with failure to properly implement or enforce fishery quotas, and with 750,000 direct and indirect jobs employed by the fishing industry around the Mediterranean Sea, political action has been slow and limited.<sup>31</sup> Every nation has a responsibility to ensure its citizens are fishing responsibly and sustainably, but several territories identified as the “Pacific Six”

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<sup>29</sup> “Regulating Fisheries Subsidies,” UNCTAD

<sup>30</sup> Agata Mrowiec, “Overfishing and pollution have trashed the Mediterranean,” Oceana International

<sup>31</sup> “IS MEDITERRANEAN HAKE ON THE VERGE OF COLLAPSE?” MedReAct

represent the majority of global fishing: Spain, Taiwan, Japan, South Korea, China, and Chinese Taipei.<sup>32</sup> Proportional or egalitarian responses to overfishing are up to national discretion. Beyond the FAO, there are several international organizations that should also be taken into consideration. The FAO currently employs 66 Regional Fishery Bodies to spur local collaboration and reconnaissance for solving fishery problems at a more local level.<sup>33</sup> These cooperatives have played a key role in conservation and local management of marine life in previous UN initiatives. The FAO also collaborates with international marine science organizations like the International Council for the Exploration of the Sea and the Coordinating Working Party on Fishery Statistics to keep updated information on fishery exploitation and modern technology for prevention of the phenomenon.<sup>34</sup> Although all of these organizations are important to keep in mind, it is domestic businesses and governments that will be critical for the implementation of any anti-exploitation measures. Previous United Nations efforts have failed to engage local populations, spurring criticism and inefficiency on the international level.

There are several existing UN treaties that attempt to resolve fishery decline. The United Nations Convention on the Law of the Sea, or UNCLOS, is the premier international maritime treaty. The “marine constitution” covers a variety of oceanic issues, one of which was the issue of right to fisheries. The treaty separated oceanic waters into two regions: territorial waters and

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<sup>32</sup> Brady Dennis, Chris Mooney, “New maps show the utterly massive imprint of fishing on the world’s oceans,” *Washington Post*

<sup>33</sup> “Regional Fishery Bodies (RFB),” FAO

<sup>34</sup> “Role of Regional Bodies in Conservation,” FAO,

high waters.<sup>35</sup> Territorial waters, also referred to as “exclusive economic zones” by newer UNCLOS articles, extend 200 miles beyond the boundaries of a coastal nation, and restrict rights over the fisheries to the appurtenant state. High seas, however, remained unregulated, allowing all nations equal access to fishing rights without restriction. Coastal nations were asked to enforce conservation measures for all ships flying their nation’s flag, but no enforcement mechanisms were introduced to follow through on such a request. This was the first establishment of a nation’s right to fisheries within their exclusive economic zones, and the freedom of all nations to fish in non-sovereign areas. Resolution 64/72 elaborated upon these initial rulings, requesting individual nations work to achieving sustainable fishing within their EEZ’s, ratify UNCLOS, submit sustainability plans to the FAO, crack down on illegal fishing and reign in international flag usage, increase unilateral and multilateral surveillance of fisheries and enforcement of conservation policies, and decrease harmful byproducts of modern fishing like by-catch and drift net fishing.<sup>36</sup> Resolution 66/68 addresses similar concerns, highlighting the same areas but applying extra focus to capacity building, or the expansion of state’s abilities to create and enforce conservation efforts through cooperation with other nations, the UNGA,

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<sup>35</sup> Shigeru Oda, “Fisheries under the United Nations Convention on the Law of the Sea,” *The American Journal of International Law*

<sup>36</sup> “Resolution adopted by the General Assembly on 4 December 2009, Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments,” UN General Assembly



and the FAO.<sup>37</sup> To complete the trifecta, resolution 71/123 calls on nations to implement the measures of a variety of international ocean accords, including “The Future We Want” declaration, which emphasizes marine life’s role in sustainable food security, the UN’s Sustainable Development Goals, and the Johannesburg World Summit on Sustainable Development Outcome.<sup>38</sup> This is also the first resolution to outline the serious effect of climate change and ocean acidification on marine life and fishery maintenance.

## KEY ACTORS

Although sustainable fishery use may appear to be a consensus value, there are a variety of factions that have formed in previous maritime treaties arising from competing interests. Industrialized and growing countries are divided on fishing priorities. As consumer preference and food demand has risen in post-industrial nations, an increasing number of these countries have signed treaties with growing nations to gain access to national reserves that are being fished below their maximum sustainable levels, in a phenomenon known as “ocean-grabbing.”<sup>39</sup>

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<sup>37</sup> “Resolution adopted by the General Assembly on 6 December 2011, Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments,” UN General Assembly

<sup>38</sup> “Resolution adopted by the General Assembly on 7 December 2016, Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments,” UN General Assembly

<sup>39</sup> Fiona Harvey, “Developing nations’ fishing grounds should be protected, UN says,” The Guardian

Industrialized aquaculture practiced by many of these developed nations is notably different from historic local fishing, and the two are in conflict. A quarter of the fish caught in the ocean annually are used to feed fish in factory farms, when much of this fish has historically fed locals.<sup>40</sup> Smaller fish are made into fishmeal to feed larger fish, most of which are sold to industrialized nations while the inhabitants of the region it was fed are left with nothing. Many industrialized nations benefit from free trade and globalized fishing; meanwhile, industrializing nations may be more interested in protecting national reserves and preventing foreign intervention. The previously mentioned “Pacific Six” also reveal a greater separation between fishing superpowers and normal coastal states. Countries with strong economic dependence on fishing are historically against the extensions of EEZ’s or the strengthening of universal conservation initiatives, while states with a strong record of conservation may push to rein in countries with what may be seen as unsustainable levels of fishing. The protection of fishing rights also bleeds into military concerns for coastal nations as well. Countries with strong naval forces have fought against the restriction of freedom of naval movement that maritime treaties like UNCLOS have supported. Nations lacking this strong naval presence may be more interested in protecting their national waters and strengthening the protections given to territorial waters. Smaller island nations such as those in the Alliance of Small Island States may disagree with larger industrialized nations over climate change accords. Rising sea levels pose an existential threat to these island nations,

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<sup>40</sup> Ian Urbana, “Fish Farming Is Feeding the Globe. What’s the Cost for Locals?,” The New Yorker

and may be much more in support of fighting rising temperatures and sea levels than the nations that primarily produce the greenhouse gasses that cause it. The primary difference, however, that delegates should focus on is the balance between food security and conservation. For many growing nations, conservation is a secondary task to providing a stable food source for its citizens. Reducing fishery use for many states leads to a decrease in food supplied to coastal communities, making conservation actively detrimental to short-term health and food security.<sup>41</sup> These countries may see conservation as a noble goal, but one that is unreasonable for nations that are still struggling to provide consistent nutrition to its populations. For industrialized nations that rely less on fisheries as an active food source, conservation efforts are more straightforward and a higher priority. For these countries, a potential reduction in caught fish is not as impactful as nations that rely so heavily on its production. These two blocks will likely see conflict over the extent to which one of these values should be placed over the other, but any effective resolution will be able to balance both of these issues with creative and compromising solutions.

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<sup>41</sup> “Troubled waters: How global marine wildlife protection can undermine fishing communities,” University of Oxford

## LOOKING FORWARD

When looking towards the future of sustainable fishery use, we highly recommend consulting the 2020 FAO report “The State of World Fisheries and Aquaculture.”<sup>42</sup> The document provides concepts that need shoring up in international maritime procedure (pun intended). The following “key messages” are quoted directly from the report with extra analysis:

- *Reinforcing international and regional governance mechanisms:* The current system of Regional Fisheries Bodies and Regional Fisheries Management Organizations should be re-examined. More can be done to include local agencies into the decisions and enforcement of international maritime policy.
- *Reducing pre- and post-harvest loss and waste:* As discussed earlier in the background guide, bycatch is a major contributor to fishery exhaustion, and does nothing to support food security. With emerging technology and modernized methods, bycatch can be reduced, but the implementation of these strategies and technologies has to be coordinated.
- *Integrating market-based mechanisms to help support sustainability:* The enemy of sustainability is a lack of awareness and enforcement, and many market institutions provide more transparency and accountability for fisheries. Implementing tracing

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<sup>42</sup> “Sustainability in Action: The State of World Fisheries and Aquaculture 2020,” FAO

programs, certification systems, and other market-based incentives may be a popular direction for some countries to pursue.

- *Enhancing efforts towards social sustainability in fisheries and aquaculture:* States with high levels of economic inequality or social justice fueled by overfishing can champion women and worker's rights in the fishing industry, while pushing for international cooperation to improve quality of life and conservation in every portion of the fishing industry.

Although this is an incomplete list of possible solutions for fishery decline, these topics have and will be prevalent in any discussion of how to responsibly use ocean resources. Nations should analyze their country's conservation record and priorities and decide what strategies they believe to be most effective in advancing their own interests and those of the international community.

#### **Questions to Consider:**

- How can international conservation efforts manage sustainable use of fisheries without decreasing food security for vulnerable nations?
- How should modern technologies and fishing practices be disseminated?
- Should local organizations have more control/autonomy over fishery decisions and enforcement?
- How can social and economic inequalities be reduced in tandem with fishery exhaustion?

- What is a nation's rights to fisheries around their and other nation's coastlines?

### Further Readings:

- FAO State of World Fisheries and Aquaculture (2020):  
<https://www.fao.org/documents/card/en/c/ca9229en/>
- Nature: "Sustainable Fisheries": <https://www.nature.com/articles/4551044a>
- "Subsidies, buybacks, and sustainable fisheries":  
[https://www.sciencedirect.com/science/article/pii/S009506960400138X?casa\\_token=i6Y34lfTRGcAAAAA:aY4JLaoHaK3ZZxpNdQRpXbUECp723iTUsH05Z\\_6oWQuy5AL9sIZipgpfIR5RpbuSyUWpBISrg](https://www.sciencedirect.com/science/article/pii/S009506960400138X?casa_token=i6Y34lfTRGcAAAAA:aY4JLaoHaK3ZZxpNdQRpXbUECp723iTUsH05Z_6oWQuy5AL9sIZipgpfIR5RpbuSyUWpBISrg)
- "The role of marine reserves in achieving sustainable fisheries":  
[https://royalsocietypublishing.org/doi/abs/10.1098/rstb.2004.1578?casa\\_token=j\\_MkbWkbNL0AAAAA:YFhWJx4C36yT6XBmFr2XsXH\\_ctero3NYQYc1SibLqZ\\_cO2ubdN6A1tcxOq16e3sfgl60hmCoeJGttA](https://royalsocietypublishing.org/doi/abs/10.1098/rstb.2004.1578?casa_token=j_MkbWkbNL0AAAAA:YFhWJx4C36yT6XBmFr2XsXH_ctero3NYQYc1SibLqZ_cO2ubdN6A1tcxOq16e3sfgl60hmCoeJGttA)

## Topic II: Global malnutrition and vitamin deficiency

### TOPIC INTRODUCTION

Despite our notable distance from a Star Trek-style post-scarcity world, we currently grow enough food to feed more than 1 ½ times the world's current population.<sup>43</sup> Production of all types of foodstuffs exceeds global needs, and with the exception of regions of conflict like South Sudan, Somalia, Yemen, and Eritrea, famine has been all but eradicated worldwide.<sup>44</sup> Despite these abundances, frightening statistics still place nutrition as the primary cause of disease and death worldwide, creating the illusion of a global food system on the brink of collapse.<sup>45</sup>

Malnutrition comes in a variety of forms, and is generally characterized by the UN in three different categories: undernutrition, micronutrient-related malnutrition, and overweight/obesity.

The frightening depiction of a global nutritional deficit drawn by sweeping statistics does little to define the nuanced differences between and inside of regions. In reality, the trend of nutritional deaths is a combination of two issues; lack of access to food production inputs by the rural poor, and a rising number of poor, high-caloric diets associated with chronic nutritional illnesses.

Malnutrition is a deeply nuanced issue, and expecting a single weekend to solve the issue is

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<sup>43</sup> Miguel Altieri, Annie Shattuck, Eric Holt-Giménez, Hans Herren, Steve Gliessman, "We Already Grow Enough Food for 10 Billion People... and Still Can't End Hunger" Food First

<sup>44</sup> "The Top Five Myths about Famine," Care International

<sup>45</sup> "Malnutrition is a world health crisis," WHO

beyond naive. However, with the narrowing of the topic to these two issues, we hope delegates will find the topic more approachable, and find their niche in addressing the issue of global malnutrition.

## TOPIC HISTORY

During the 20th century, conflict and actions by authoritarian regimes caused an estimated 70 million deaths from famine.<sup>46</sup> Since that time period, global trends have generally been positive in regards to food access. Undernutrition rates fell from a global 13.4% of the population in 2001 to 8.8% of the population in 2017, with industrializing nations dropping from 32.2% of their population to 22.9%. A combination of regional economic growth, government programs, and increased efficacy of foreign aid has fueled this decrease.<sup>47</sup> These advancements have happened in most regions, but not equally. The largest advancements occurred in China and India, two highly populated countries that have seen drastic decreases in poverty and hunger since the end of the 20th century. Latin America and other parts of Southeast Asia have also seen

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<sup>46</sup> Anna Lartey, Prakash Shetty, Sudhvir Singh, Gunhild Anker Stordalen, Patrick Webb, Ramani Wijesinha-Bettoni, "Hunger and malnutrition in the 21st century," *Science and Politics of Nutrition*

<sup>47</sup> Zack Beauchamp, "The amazing decline of global hunger, in one chart," *Vox Media*



a high decline in undernutrition. South Asia as well as East and Central Africa have seen the lowest rates of decline, staying well over the 32% mark even by most modern estimates.<sup>48</sup>

These positive changes have been coupled with different trends in nutritional habits. Since 1975, global obesity rates have tripled.<sup>49</sup> One third of all adults worldwide are obese. Rates of disease and rates of mortality for weight-related illnesses like diabetes have increased during the same time period.<sup>50</sup> While most of the world may not struggle with hunger, the amount of it struggling with healthy dietary habits is increasing. High caloric, high glucose, and low nutrient foods are becoming the norm in a tide that shows no tide of slowing down.<sup>51</sup> Even in the least developed parts of the world, obesity continues to grow out of control, representing a hidden epidemic that is too often not considered in discussion of malnutrition. The increasing trend of globalization and export of high caloric foods from industrialized nations has helped to fuel this trend, flooding growing nations with low-cost food with low nutritional value. Statistical associations between rising per-capita GDP and obesity have helped to confirm this trend.<sup>52</sup>

There are still parts of the world that suffer from chronic food shortages despite this rising prevalence of abundant, low-cost food, and this lack of food security is primarily driven by

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<sup>48</sup> Anna Lartey, Prakash Shetty, Sudhvir Singh, Gunhild Anker Stordalen, Patrick Webb, Ramani Wijesinha-Bettoni, "Hunger and malnutrition in the 21st century," *Science and Politics of Nutrition*

<sup>49</sup> "Overweight and Obesity," WHO

<sup>50</sup> "Diabetes," WHO

<sup>51</sup> "Malnutrition," WHO

<sup>52</sup> Victor Asal, Wenhui Feng, Ashley Fox, "What is driving global obesity trends? Globalization or "modernization"?" *Globalization and Health Journal*

three phenomena: ecological disaster, political instability, and armed conflict, all of which are primarily human-fueled problems.<sup>53</sup> Man-made drought from climate change and agricultural mismanagement has decreased crop yields in growing nations and fueled resource conflicts that further destabilize food sources. Conflict and terrorism in East and Central African nations has also been a recurring source of famine. The causes of this food insecurity represents an important aspect of undernutrition; much of modern undernutrition is not an issue of low food production, but instead a lack of access to inputs for agriculture or sources of production.

In some cases, malnutrition is also the product of social inequalities. Female children and adults have higher rates of stunted development and lower rates of caloric intake, a systemic issue that affects almost all growing and industrialized nations.<sup>54</sup> Gender norms and expectations of women create disproportionate levels of undernutrition and development stunting, all of which have not seen significant changes despite advancements in fighting malnutrition.

## THE ISSUES

Each region of the world deals with specific issues in regards to type and severity of malnutrition, and each will require a unique approach to solving. Below is a list of some of the

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<sup>53</sup> Anna Lartey, Prakash Shetty, Sudhvir Singh, Gunhild Anker Stordalen, Patrick Webb, Ramani Wijesinha-Bettoni, "Hunger and malnutrition in the 21st century," *Science and Politics of Nutrition*

<sup>54</sup> M Ndiku, K Jaceldo-Siegl, P Singh & J Sabaté, "Gender inequality in food intake and nutritional status of children under 5 years old in rural Eastern Kenya," *European Journal of Clinical Nutrition*

most pressing issues for each region. Keep in mind this is a limited list; with the scope of nutritional deficiency, far more problems can be identified, but this should hopefully guide delegates in the right direction and help to flesh out a country's primary objectives for the committee.

- South America: This region has cited rising obesity rate and a high anemia rate, with 8.2% of the population considered obese and 17.2% of mature women experiencing anemia.<sup>55</sup> Diabetes rates have continued to climb, as well as other noncommunicable diseases that come from weight gain. Creating access to stable food sources that are high in both iron and vitamins to combat these two trends will be an important step for future industrialization. In terms of conflict, the continued onslaught of COVID-19 has also created a new source of food insecurity for migrants in South America.<sup>56</sup> Migrants from Venezuela have had food shortages grow more severe through the COVID-19 pandemic, an issue that may continue to cause problems for the region in the future. Addressing the plight of these migrants may also be a primary focus for South American nations.
- Central America and the Caribbean: The variety in economic and nutritional outcomes within the Caribbean and Central America makes generalizations about the region difficult. One out of every five children in the Caribbean experience stunted development

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<sup>55</sup> "South America Country Nutrition Profiles," Global Nutrition Report

<sup>56</sup> "Fall out of COVID-19 severely affects food security of migrants in South America," World Food Programme

from undernutrition, a statistic that adds up to about 5 million children, and with this statistic in isolation the region seems like a primary candidate for focus by the FAO.<sup>57</sup> In reality, national differences are stark.<sup>58</sup> Nations like Costa Rica, Cuba, and Panama have generally high access to food, and primarily struggle with rising obesity rates in terms of malnutrition. For others like Haiti, Guatemala, and El Salvador, rates of undernutrition remain high. Even within these countries inequalities are apparent, with rural and poor regions of more developed countries still struggling with adequate food access.<sup>59</sup> Fruits and vegetables also remain a valuable commodity, with 20% of Latin American and Caribbean children receiving zero fruits and vegetables during critical development. Among adolescents, there are severe nutritional inequalities between income brackets. Rural regions, especially those consisting of small family farms, experience almost double the amount of stunting as their urban counterparts.<sup>60</sup> For these reasons, these regions have previously requested collaboration with the international community to increase social spending, a direction that delegates may or may not be interested in

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<sup>57</sup> “One in five children under five are not growing well due to malnutrition in Latin America and the Caribbean, warns UNICEF,” UNICEF

<sup>58</sup> Verónica Amarante, Marco Galván and Xavier Mancero, “Inequality in Latin America: a global measurement,” Cepal Review

<sup>59</sup> “Deep inequalities worsen Latin America and Caribbean vulnerabilities to crises: IDB report,” Inter-American Development Bank

<sup>60</sup> “Malnutrition inequality in Central America/Caribbean,” SUN Movement,

pursuing. Regardless, undernutrition and food security remains a primary concern for many of the countries in this region.

- North America/Western Europe: For the industrialized nations of North America and Western Europe, malnutrition is primarily an issue of overweight and obesity. 2020 projections estimate 66.9% of males and 50.9% of females are considered in the overweight category, with 25.6% of males and 22.3% of females classified as obese.<sup>61</sup> These numbers have been on an upward trend since 2000, and under current policies show no sign of stopping. While these countries should still be primarily interested in solving the most severe forms of malnutrition found in nations with low food security, additional interest should lie in solving the underlying causes of obesity. Obesity-related malnutrition is a difficult problem to address, comprising a variety of social and environmental causes that vary from country to country. These facts aren't to say members of this region are immune from undernutrition; more than ten percent of Americans in 2020 report experiencing food insecurity sometime during the last year.<sup>62</sup> Even in the world's wealthiest nations, access to food is not equal.
- Central and Eastern Europe: Despite a large lack of nutritional data from most Eastern and Central European nations, current estimates place the region's intake of fats, sugar

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<sup>61</sup> "Western Europe" Global Nutrition Report

<sup>62</sup> "Food Security in the US - Key Statistics & Graphics," USDA ERS

and complex carbohydrates as above the recommended average.<sup>63</sup> The region has seen a steady decline in both child overweight and undernutrition, but increasing rates of adult obesity in both genders.<sup>64</sup> Much like other industrializing nations, the region's primary nutritional concern has been establishing better nutritional standards for food instead of improving upon existing food security. This is another region in which large statistics may overlook notable differences between member states, particularly participants in the EU and non-members. Although not hugely different, Eastern Europe experiences stunting rates 4.3% higher than the European Union, and higher levels of obesity in men and women. Anemia is also 9.2% more prevalent outside of the EU.

- Mediterranean and Middle East: Political and nutritional instability hold a cyclical relationship for much of the Mediterranean. Social unrest fueled by a lack of food security has often developed into civil or revolutionary conflict, which further decreases agricultural output and increases strain on existing food sources.<sup>65</sup> The COVID-19 pandemic has also exacerbated these insecurities. Several of the world's most food insecure nations are found in this region, and have seen compounding effects of loss of

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<sup>63</sup> Sinéad Boylan, Ailsa Welch, Hynek Pikhart, Sofia Malyutina, Andrzej Pajak, Ruzena Kubinova, Oksana Bragina, Galina Simonova, Urszula Stepaniak, Aleksandra Gilis-Januszczyńska, Lubomíra Milla, Anne Peasey, Michael Marmot & Martin Bobak, "Dietary habits in three Central and Eastern European countries: the HAPIEE study," *BMC Public Health*

<sup>64</sup> "Eastern Europe," *Global Nutrition Report*

<sup>65</sup> Sébastien Abis, "Food Security and Conflicts in the Mediterranean Region," *The French Institute for International and Strategic Affairs*

food security from the outcomes of the pandemic.<sup>66</sup> The primary issue for these nations is finding adequate food sources to keep populations alive. As important as addressing undernutrition and obesity is for these nations, starvation is the forefront problem for several countries in this region. A unique food insecurity issue that this region faces is an acute water shortage. More than 180 million individuals in the Middle East are in “water poverty,” defined as chronic lack of access to potable water.<sup>67</sup> Pollution from growing unregulated urban areas is also contaminating water and worsening the issue. Water is a critical input for rural food development, and should be a priority.

- Southeast Asia: Unlike some of the other regions discussed in this background guide, Southeast Asia faces a war on two fronts. Combatting what UNICEF calls a “double burden” of malnutrition, both undernutrition and obesity are growing issues for the region.<sup>68</sup> Despite its high potential for development and economic growth, Asia is still a hotspot for malnutrition, with 70% of all malnourished children worldwide found in this continent.<sup>69</sup> The region has made vast strides, seeing a steady decline of children under five facing undernutrition and a rising rate of normal birth weights for children, but more

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<sup>66</sup> “Food crisis likely to worsen in the Middle East and North Africa as COVID-19 continues,” UNICEF

<sup>67</sup> “UfM on World Water Day: addressing water scarcity in the Mediterranean,” Union for the Mediterranean

<sup>68</sup> “Children in South East Asia face a ‘double burden’ of obesity and undernutrition, new report finds,” UNICEF

<sup>69</sup> Geok Lin Khor, “Update on the prevalence of malnutrition among children in Asia,” Nepal Medical College

effort is required to address the root of current malnutrition causes.<sup>70</sup> Southeast Asia is marred with poverty, food insecurity, poor child feeding practices, poor sanitation, and low crop yields, all of which collectively contribute to the problem.<sup>71</sup> The WHO has advocated that existing nutritional programs “remain in focus and are scaled up,” a direction Southeast Asian countries have previously advocated for in the FAO.<sup>72</sup> The “double burden” of malnutrition this region faces implores Southeast Asian nations to address both concerns of undernutrition and obesity, targeting sources of food security and sources of high-caloric, vitamin deficient food. Much like Central America, however, Southeast Asia does see notable differences between its constituent states. Indonesia maintains a relative level of wealth, while much of Laos and Cambodia still suffer from chronic food insecurity. Conflict and state terrorism in nations like Myanmar have created artificial food insecurity and famine as well. The region is diverse, and will require a diverse approach. By comparison, much of South and East (as opposed to South-east) Asia including China, Japan, and India, hold low levels of hunger and undernutrition.

- West and Sub-Saharan Africa: From a combination of poverty, conflict, and ineffective government action, this region has some of the most severe rates of malnutrition globally.

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<sup>70</sup> “South-eastern Asia,” Global Nutrition Report

<sup>71</sup> “Malnutrition in Southeast Asia,” The Asean Post

<sup>72</sup> “South-east Asian Strategic Action Plan,” WHO



Rather than citing more statistics discussing its severity, we will instead outline the recommendations that the World Health Organization, FAO, and other UN entities in the past have recommended for improving food security and nutrition in this region in the past.<sup>73</sup>

- Increasing the application of community-guided programs: Government policy should focus more on empowering community initiatives rather than ineffective national programs.
- Anti-corruption efforts: Rather than empty statements or unenforceable bills, countries in this region should take substantive steps to create corruption safeguards and transparent government institutions.
- Modernization: The advances in fertilization, pesticides, and GMOs have huge potential for boosting crop outputs and improving climate resilience for low costs. Implementing these procedures with the help of the international community could lay the groundwork for long-term agricultural sustainability.
- Transportation improvements: Although expensive and logistically difficult, improving even simple transportation methods like roads greatly reduces travel costs and improves access to food from different regions.

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<sup>73</sup> Paschal Kum Awah, Luchuo Engelbert Bain, Ngia Geraldine, Njem Peter Kindong, Yelena Sigal, Nsah Bernard, and Ajime Tom Tanjeko, "Malnutrition in Sub – Saharan Africa: burden, causes and prospects," The Pan African Medical Journal

- National census: For low cost, governments can use international census workers to obtain specific data on regions, allowing them to better target funds and resources for fighting malnutrition based on a region's actual needs.
- Cross-institutional collaboration: Combining resources from national ministries of health, education, agricultural, environment, etc. is essential for even minimum success for many of these initiatives.
- Oceania: Small island states, despite geographic and demographic differences, have a few similar interests that will likely be important during resolution construction. More than 80% of food consumed in island nations comes from imports, a number that has steadily risen and stayed constant in the past few years.<sup>74</sup> This huge reliance on foreign food is primarily from low import costs and foreign food production, which has hurt local food businesses. Low foreign prices put local competitors out of business, which further increases reliance on imports, creating a vicious cycle island nations have yet to find a solution to. Despite being home to large amounts of nuts, fruits, vegetables, and other high-vitamin foods, island nations have turned primarily to high-caloric international foods, further fueling an obesity crisis. Both boosting domestic food production and increasing nutritional value of diets for citizens may be two primary concerns of island nations for this conference.

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<sup>74</sup> "How much do you know about small island nations?" FAO

Every one of these regions represents an important intersection in the issue of malnutrition.

Delegates should find a balance between focusing on the core issues of their region while not ignoring the importance of those from others.

The UN has not been silent on the subject of malnutrition. The creation of UN Nutrition, a cross-agency collaboration dedicated to improving global nutrition and combating food insecurity, was a major step taken by the UN to permanently dedicate resources to the continued analysis of malnutrition.<sup>75</sup> Most recently, the UN has also declared 2016-2025 the “Decade of Action on Nutrition” in an attempt to eradicate hunger and malnutrition by 2030, and outlined a work plan to implement the necessary steps to accomplish this goal internationally.

Unfortunately, existing resolutions and programs are estimated to fall short of this goal, with percentages of the malnourished decreasing but the overall number still rising.<sup>76</sup> Previous resolutions have pushed for the increase of sustainable family farming, the expansion of existing social programs, and improved digital cooperation among countries to facilitate better international food trade.<sup>77</sup> Resolutions on malnutrition vary widely in their ideas and implementation; the playing field is equally wide for you, and we look forward to seeing what initiatives you decide to spearhead against this tragic issue.

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<sup>75</sup> “UN Nutrition,” UN Nutrition

<sup>76</sup> “General Assembly Unanimously Adopts Resolution Highlighting Decade of Action on Nutrition,” UN General Assembly

<sup>77</sup> “UN General Assembly adopts resolutions on food and agriculture, rural poverty,” FAO

## KEY ACTORS

Realistically, there should be very little conflict between blocs. Despite regional differences, all countries should be working towards the same goal; ending malnutrition in all its forms. With that said, regional priorities and approaches to solving the different prongs of malnutrition may vary. The issue of undernutrition versus overweight and obesity will be a clear division between national priorities. Growing nations whose focus falls on solving undernutrition and ensuring food security may wish to promote initiatives that increase food production as their main focus. For these countries, the issue of increasing nutritional value of food is second to ensuring there are stable sources of food at all. For other nations that may have a more solid foundation for food access, fighting obesity by increasing the nutritional value of food may be a focus. Although no nation should ignore the plight of starvation anywhere in the world, obesity is an important dimension of malnutrition, and countries that primarily struggle with this issue should include solutions in their resolution. Differences may also divide countries along international and domestic lines. Nations that prefer to solve problems internally, or have been harmed by foreign intervention in the past, may prefer to use international aid to strengthen national and community-based programs, rather than rely on multilateralism to achieve their goals. For other internationally-oriented countries, the expansion of multi-country collaboration on solving issues may be a more suitable solution.

## LOOKING AHEAD

A few directions have been proposed for solving malnutrition by the UN's 2030 goal. The expansion of GMOs and climate-resistant agricultural practices has been recommended as a way of increasing crop yields and strengthening food security for countries that still rely primarily on agriculture as their food source.<sup>78</sup> These programs have historically been expensive, difficult to effectively spread, and stalled by local distrust, all problems which proponents of this solution should have measures to overcome. Pesticides and integrated pest management plans are another way of protecting crop yields in vulnerable areas, although health concerns should also be taken into account when proposing this solution. As stated in the introduction to the background guide, much of modern undernutrition is an issue of access. Lack of inputs to food production leave the rural poor of even some of the world's wealthiest countries food insecure. Increasing access to these inputs like water, land, and capital is one of the most apparent ways for nations to decrease food insecurity and provide stable sources of food production for everyone. In regards to obesity, solving the social causes behind the disease can be a powerful way of fighting it. Informational campaigns promoting the health benefits of a varied diet and avoiding high-caloric intake foods may help nations which deal with misinformation surrounding

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<sup>78</sup> "NINE SOLUTIONS TO GLOBAL HUNGER TO GET US TO 2030," Concern Worldwide 2030

nutrition. Providing more access to high-nutrition food through government subsidies of food purchases or production can also help make healthy diets more accessible to low-income families.

### Questions to consider:

- How can the international community combat global hunger, undernutrition, and food insecurity?
- What can the international community do to stop globally increasing obesity rates?
- How can local communities be empowered to fight malnutrition?
- What is the role of technological advancements for preventing malnutrition?
- Can the UN's 2030 goal of eliminating malnutrition be achieved?

### Further Readings:

- Comparisons between economic growth and malnutrition:  
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- UNICEF Report: *Combating Malnutrition: Time to Act*  
[https://books.google.com/books?hl=en&lr=&id=sNA6K\\_1SFQ0C&oi=fnd&pg=PR7&dq](https://books.google.com/books?hl=en&lr=&id=sNA6K_1SFQ0C&oi=fnd&pg=PR7&dq)

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