# WASMUN 2018

March 3rd and 4th, 2018 | University of Washington | Seattle, Washington

Background Guide for the

# Food and Agriculture Organization Conference

# Contents

# Welcome from the Director-General

*Dear Delegates,*

It is with great pleasure that I welcome you all to Washington State Model United Nations (WASMUN) 2018. My name is Tyler Lincoln, and I am serving as your Director-General for this year's WASMUN conference. Throughout my time at the University of Washington, I have been able to participate in Model United Nations as a delegate, committee staff, and executive staff, each bringing their own sets of challenges and rewards. I have been working with WASMUN for 3 years now, first serving as committee staff, and last year as the Assistant-Director-General for WASMUN 2017. As Director-General for this year's conference, it has been my goal to continue to increase WASMUN's ability to provide a fun, challenging experience from which all can grow and learn.

The theme of this year's WASMUN conference is building a more sustainable future together. With the conference taking place in the Pacific Northwest, and keeping in mind the 2015 Sustainable Development Goals, this year's WASMUN is focusing on diversity and inclusivity. The wide range of committees chosen for WASMUN this year aims to reflect the importance of sustainable development. Additionally, the diversity of committees aims to show the interlinkages between the social, economic and political pillars of sustainable development. Each of these three dimensions is crucial for promoting the development of all. We hope you keep this in mind as you pursue your own unique solutions to the challenges we provide you.

On a final note, each committee dais worked hard in ensuring they provide you with helpful and useful information through writing the background guides. That being said, I wish you the best of luck in preparing for this conference and I look forward to meeting you all in a couple of months! If you have any questions during your preparation, please don't hesitate to send them to dg@wasmun.org.

Best,

Tyler Lincoln

Director-General

WASMUN 2018

# Welcome from the FAO Committee Staff

*Dear Delegates,*

We are excited for your participation in the Food and Agriculture simulation of WASMUN 2018. For over seven decades the FAO has been at the forefront of ending hunger and the development of sustainable practices around the globe. The challenges of the 21st century including increasing extreme weather and preserving the world's fisheries are great. While this is only a practice simulation the ideas and insights you generate may one day be incorporated in meeting these goals. The United Nations was founded on the principle of consensus and we ask you to keep that in mind during this conference. Look for ways to work with your fellow delegates to develop the best solutions to these challenges you. We cannot wait to see what you come up with.

Sincerely

Andrew Heidke, Assistant Director

Jon Schaeffer, Director

# Committee Overview

## *Introduction*

Even though overall nutrition of the worldwide population has increased as a whole, there is still a large proportion of the world that struggles to get the appropriate amount of food to maintain their way of life.[1] The Food and Agriculture Organization of the United Nations (FAO) was founded with the aim of achieving food security for all of humanity.[2] Through the variety of functions that FAO performs, it works to reduce hunger, malnutrition, and food insecurity; increase the sustainability and productiveness of agriculture, forestry, and fisheries; reduce rural poverty; enable inclusive and efficient agriculture and food systems; and improve the resilience of livelihoods to disasters.[3]

The Food and Agriculture Organization of the United Nations (FAO) is a Specialized Agency, which coordinates with the United Nations through the Economic and Social Council.

## *History*

The idea of an organization that would address food and agricultural needs is not a new one and can be traced to the early 1900s. [4] the International Institute of Agriculture (IIA) was founded in 1905 and established in Rome, Italy.[5] The IIA served primarily as an organization that collected and distributed agricultural statistics. In 1943, United States President Franklin Delano Roosevelt convened representatives from 44 governments to discuss the creation, and committed to the founding, of a permanent agricultural organization.[6] From this meeting, the Interim Commission on Food and Agriculture was established.[7] After the end of the Second World War, the founding conference of FAO was held in Quebec, Canada, with the signing of the constitution of FAO and its entry into force October 1945.[8] FAO inherited the statistical functions of the IIA that remain one of the core functions of the organization today.[9]

## *Structure and Organization*

As a specialized agency of the United Nations (UN), FAO reports to the Economic and Social Council (ECOSOC).[10] FAO currently consists of 194 members, two associate members (Faroe Islands and Tokelau), and one member organization (European Union).[11] The primary body of FAO is the Conference of Member Nations, which meets every two years.[12] A governing body of 49 Member Nations is elected to serve three-year terms on the Governing Council.[13] The Council serves as the executive body of the Organization and meets between the

[1] FAO, State of Food Insecurity, 2013.
[2] FAO, About FAO |FAO| Food and Agriculture Organization of the United Nations.
[3] FAO, Our Priorities: FAO Strategic Objectives, 2013.
[4] FAO, FAO- its origins, formation and evolution 1945-1981.
[5] FAO, About FAO |FAO| Food and Agriculture Organization of the United Nations.
[6] Ibid.
[7] FAO, FAO- its origins, formation and evolution 1945-1981.
[8] Ibid.
[9] Ibid.
[10] New Zealand, United Nations Handbook 2013-14, 2013.
[11] FAO, Legal Office: FAO Members.
[12] FAO, Governing and Statutory Bodies: Council.
[13] FAO, Basic Texts of the Food and Agriculture Organization of the United Nations, Volumes I and II, 2013.

biannual FAO Conference, during which time the council acts on current food and agricultural activities and situations, and current and future activities of the organization of the whole, including the development of the Programme of Work.[14]

FAO is led by the Director-General, who is appointed by the Conference for an initial four-year term that is renewable for a further four years.[15] The Organization is composed of six main departments: Agriculture and Consumer Protection, Economic and Social Development, Fisheries and Aquaculture, and Forestry.[16] These organizations work together to develop sets of targets and indications related to food security, sustainable agriculture, and nutrition.[17]

## *Mandate and Powers*

The FAO's primary responsibilities are outlined in the Basic Texts of FAO.[18] These basic texts include the FAO Constitution and the applicable Rules of Procedure.[19] The mandate of FAO, as outlined in the preamble of the constitution, is to address the following: raising levels of nutrition and standards of living of the peoples under their respective jurisdictions, securing improvements in the efficiency of the production and distribution of all food and agricultural products, bettering the condition of rural populations, and contributing towards an expanding world economy and ensuring humanity's freedom from hunger.[20] FAO is primarily responsible for increasing the level of nutrition but is not responsible for the direct provision of food.[21] FAO works closely with the World Food Programme (WFP) and other agencies to facilitate the provision of food, particularly in the wake of disasters.

The core powers of FAO are outlined in FAO constitution and are mirrored in the current priorities of the Organization. The core powers of FAO are:

- The collection, analysis, interpretation and dissemination of information related to nutrition, food and agriculture
- The promotion of and, where appropriate, recommendation for national and international action with respect to: scientific, technological, social, and economic research relating to nutrition and agriculture, improvement of education and administration relating to nutrition
- The provision of technical assistance as requested by Member States
- The organization of, in cooperation with the governments concerned, such missions as may be needed to assist them to fulfill the obligations arising from their acceptance of the recommendations of the United Nations Conference on Food and Agriculture and the Constitution

Generally, the taking of all necessary and appropriate action to implement the purposes of the Organization as set forth in the Preamble.[22]

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[14] FAO, Governing and Statutory Bodies: Council.
[15] FAO, Basic Texts of the Food and Agriculture Organization of the United Nations, Volumes I and II, 2013.
[16] FAO, Departments| FAO | Food and Agriculture Organization of the United Nations.
[17] WFP, UN Rome-Based Agencies Reveal Food Security and Nutrition Targets For Post-2015 Agenda, 2014.
[18] FAO, Basic Texts of the Food and Agriculture Organization of the United Nations, Volumes I and II, 2013.
[19] Ibid.
[20] FAO, Basic Texts of the Food and Agriculture Organization of the United Nations, Volumes I and II, 2013.
[21] UNEP, United Nations Specialised Agencies versus United Nations Programmes, 2010.
[22] FAO, FAO Attributes, Core Functions, and Comparative Advantages.

In addition to its core powers, FAO also provides assistance in emergencies. FAO is involved in Disaster Risk Reduction activities to increase the resilience of communities to disasters, FAO is involved in the response to disasters by conducting needs assessments such as Crop and Food Supply Assessment Missions and the Integrated Food Security and Humanitarian Phase Classification Scheme.[23] FAO co-leads the Food Security cluster with the WFP.[24] The Food Security Cluster works to ensure that adequate nutrition and food are provided in humanitarian emergencies through the coordination of multiple.

## *Structure and Organization*

As a specialized agency of the United Nations (UN), FAO reports to the Economic and Social Council (ECOSOC).[25] The FAO currently consists of 194 members, two associate members (Faroe Islands and Tokelau), and one member organization (European Union).[26] The primary body of FAO is the Conference of Member Nations, which meets every two years.[27] A governing body of 49 Member Nations is elected to serve three-year terms on the Governing Council.[28] The Council serves as the executive body of the Organization and meets between the biannual FAO Conference, during which time the council acts on current food and agricultural activities and situations, and current and future activities of the organization of the whole, including the development of the Programme of Work.[29] The FAO is led by the Director-General, who is appointed by the Conference for an initial four-year term that is renewable for a further four years.[30] The Organization is composed of six main departments: Agriculture and Consumer Protection, Economic and Social Development, Fisheries and Aquaculture, and Forestry.[31] These organizations work together to develop sets of targets and indications related to food security, sustainable agriculture, and nutrition.[32]

## *Recent Work*

The 40th Session of the FAO Conference was held from 3 July to 8 July 2017 and Member States discussed and reviewed the work of FAO on the SDGs and its programmatic work.[33] In addition, the conference adopted the 2018- 2019 Biennial Theme, which is "Climate Change and its impact on the work and activities of FAO."[34] The 2017 Programme Evaluation Report found that most of FAO's alignment of its programs to national and regional and global priorities, satisfactory or highly satisfactory through strengthening the Organization's ability to work closely with stakeholders to achieve favorable outcomes.[35] FAO's programs aimed at food security, nutrition, forestry's, fisheries, were among its best performing which was determined by FAO's ability to realize stated program outcomes.[36] FAO indicated its continued work towards aligning its strategic objective and climate change through the adoption of the 2018-2019 Biennial Theme, "Climate Change and its impact on the work and

[23] FAO, FAO in Emergencies: Needs assessment.
[24] Humanitarian Response, Humanitarian Response: About.
[25] New Zealand, United Nations Handbook 2013-14, 2013.
[26] FAO, Legal Office: FAO Members.
[27] FAO, Governing and Statutory Bodies: Council.
[28] FAO, Basic Texts of the Food and Agriculture Organization of the United Nations, Volumes I and II, 2013.
[29] FAO, Governing and Statutory Bodies: Council.
[30] FAO, Basic Texts of the Food and Agriculture Organization of the United Nations, Volumes I and II, 2013.
[31] FAO, Departments| FAO | Food and Agriculture Organization of the United Nations.
[32] WFP, UN Rome-Based Agencies Reveal Food Security and Nutrition Targets For Post-2015 Agenda, 2014.
[33] FAO, FAO Conference ends with endorsement of UN agency's programme of work and budget, 2017.
[34] Ibid.
[35] FAO, Programme Evaluation Report 2017, 2017, pp. 4-5.
[36] Ibid., p. 4.

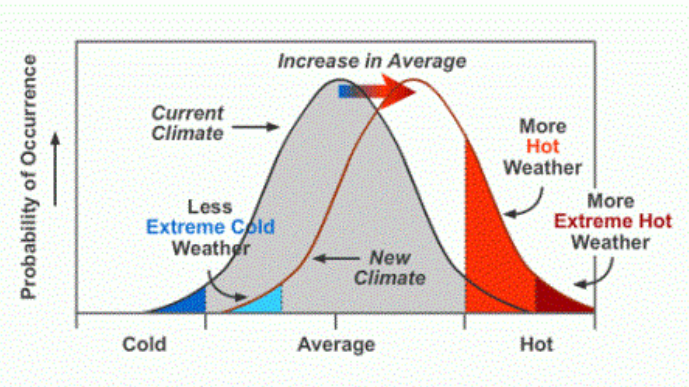
activities of FAO."[37] The primary goal of FAO in this context is to improve Member States' food and agriculture systems to be resilient to the effects of global climate change.[38]

[37] FAO, Fourtieth Session: 2018-19 Biennial Theme - Climate Change and its impact on the work and activities of FAO, 2017.
[38] Ibid.

# I. Ensuring Food Security despite the Increasing Frequency of Extreme Weather Events

## *Introduction*

Extreme weather is historically rare, but climate change increases the likelihood of extreme weather events occurring.[39] Climate scientists analyze the frequency, intensity, duration, and timing of extreme weather events and have seen an increase in intense and frequent heat waves, a decrease in in intense cold waves, and regional changes in floods, droughts and wildfires.[40] The increase in global temperatures are expected to rise at least 1.5°C from pre-industrial levels by 2100 if aggressive mitigation of greenhouse gas emissions does not occur.[41] Human activities, including burning fossil fuels and deforestation, contribute to the increase in greenhouse gas concentrations. The "greenhouse effect" is a widely held scientific theory that greenhouse gases (carbon dioxide, nitrous oxide, methane, and water vapor) block heat from escaping Earth's atmosphere causing the global temperature to rise.




*Source: https://19january2017snapshot.epa.gov/climate-change-science/understanding-link-between-climate-change-and-extreme-weather_.html*

One of the most alarming problems of climate change is that water vapor, the most abundant greenhouse gas, increases along with increased temperatures because clouds and precipitation are more abundant in the atmosphere at higher temperatures, compounding the increases in global temperature. Carbon dioxide levels have increased by more than 30% from pre-industrial levels and continue to rise. Though less abundant, methane gas is a more active greenhouse gas due to its molecular composition, and has a greater effect on trapping heat in the atmosphere than water vapor and carbon dioxide on a molecule-to-molecule bases. Nitrous oxide is a greenhouse gas that is extremely sensitive to agricultural processes and is produced by the use of fertilizers and biomass burning.[42]

The increase in global surface temperature is likely to disrupt food availability and decrease access to food across the world.[43] Future greenhouse gas emissions levels and socioeconomic conditions will determine the future of food security.

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[39] *EPA*, "Understanding the Link Between Climate Change and Extreme Weather." , 2017. 19january2017snapshot.epa.gov/climate-change-science/understanding-link-between-climate-change-and-extreme-weather_.html.

[40] USGCRP, Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, Eds., "Climate Change Impacts in the United States: The Third National Climate Assessment.", 2014. nca2014.globalchange.gov/

[41] Ibid.

[42] NASA "Climate change causes: A blanket around the Earth.", 2017. climate.nasa.gov/causes/.

[43] [14] USDA (2015). Brown, M.E., J.M. Antle, P. Backlund, E.R. Carr, W.E. Easterling, M.K. Walsh, C. Ammann, W. Attavanich, C.B. Barrett, M.F. Bellemare, V. Dancheck, C. Funk, K. Grace, J.S.I. Ingram, H. Jiang, H. Maletta, T. Mata, A. Murray, M. Ngugi, D. Ojima, B. O'Neill, and C. Tebaldi. "Climate Change, Global Food Security, and the U.S. Food System", 2014. www.usda.gov/oce/climate_change/FoodSecurity2015Assessment/FullAssessment.pdf

‘Food security’ is a term that describes when all people at all times have physical, social, and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Four key criteria are used to measure food security for any population: availability, accessibility, the ability to consume available food, and stability over time. Food security is impacted by all activities related to producing, transporting, trading, storing, processing, packaging, wholesaling, retailing, consuming, and disposing of food products, each of which are vulnerable to risks from extreme weather events. The ability to produce agricultural products is threatened by changing soil conditions due to drought or flooding, and is also threatened by large storms that can cause flash floods which carry away soil containing planted seeds. Trade and transport are not just vulnerable to reductions in supply due to drought or flood, but roads themselves can be damaged by changing soil conditions and large storms, especially hurricanes. In rural areas where roads are not paved, large storms can cause debris that block roadways, impassable conditions due to flood and or muddy conditions, or for large stretches of road to be completely washed away. Flooding also endangers stored foods and can cause spoilage of food reserves if storage facilities are unable to keep storm water from reaching food supplies. Any interruption of on the supply side of agricultural production is also felt by those who rely on agricultural systems for their nutritional needs.


*Source: https://19january2017snapshot.epa.gov/climate-change-science/understanding-link-between-climate-change-and-extreme-weather_.html*

The FAO asserts that there is no global peace without tackling food security and eliminating hunger and that there will be no food security without tackling climate change.[44] The goals laid out by the 2030 Agenda for Sustainable Development to end hunger, reduce poverty, and manage natural resources in a sustainable manner cannot be achieved if temperatures continue to rise, which is why climate action is integrated into every aspect of FAO’s Strategic Framework.[45] FAO programs addressing climate change have grown dramatically since first addressing the issue in the 1980s. The concept of Climate-Smart Agriculture (CSA) was launched by FAO in 2010 to help develop technical, policy, and investment conditions to achieve Sustainable Development Goals (SDGs) for food security. Programs were established for forestry in 2010,[46] crops in 2011,[47] fisheries in 2012,[48] livestock in 2013,[49] and genetic resources for food and agriculture in 2015.[50] FAO projects have also increased in percentage of projects dedicated to climate change, increasing from 15% to 20% between 2016 and 2017. The FAO holds a leading role for advocating food security and envisions a world where food and agricultural systems and dependent livelihoods are resilient to the impacts of climate change through adaptation measures and mitigation potential.

## *International Framework and Committee-specific Action*

[44] FAO “Strategy on Climate Change. United Nations Climate Change Conference”, 2017. http://www.fao.org/3/a-i7175e.pdf
[45] Ibid
[46] FAO, “FAO, forests and climate change.” 2010. http://www. fao.org/docrep/017/i2906e/i2906e00.pdf FAO
[47] FAO, “Potential effects of climate change on crop pollination.” 2011. http://www.fao.org/3/a-i2242e.pdf
[48] FAO, “Strategy for fisheries, aquaculture and climate change.” 2012. ftp://ftp.fao.org/fi/brochure/climate_change/stragegy_ fi_aq_climate/2011/climate_change_2011.pdf
[49] FAO, “Tackling climate change through livestock: a global assessment of emissions and mitigation opportunities.” 2014. http:// www.fao.org/3/i3437e.pdf
[50] FAO, “Coping with climate change - the roles of genetic resources for food and agriculture”. 2015, http://www.fao. org/3/a-i3866e.pdf

Tackling climate change at the international level has been a priority in the international community over the previous several decades, however greenhouse gases in the atmosphere, and global temperature, continue to rise. A legally binding agreement signed by 191 nations, the 1997 Kyoto Protocol, was the first international agreement mandating actions that reduce greenhouse gas emissions for individual nations.[51] Kyoto was an important first step for international cooperation to react to climate change but fell short of its goals as emissions grew 40% between 1990 and 2009, largely attributed to the fact that the two largest emitters of greenhouse gasses were not a party to the Kyoto Protocol.[52]

The most recent efforts at the international level to address climate change, including the Paris Agreement within the United Nations Framework Convention on Climate Change (UNFCCC), are a result of the commitment among United Nation's Member States to the SDGs set forth by the 2030 Agenda for Sustainable Development established by A/RES/70/1.[53] 170 of the 197 Parties to the UNFCCC have ratified the Paris Agreement. The FAO's Climate Change Strategy and Plan of Action seeks to deliver on SDGs 1, 2, and 13 directly and is relevant to SDGs 14 and 15 as well.

FAO programs are funded through assessed contributions to Member States as well as voluntary contributions from partners; including nations, corporations, and NGOs.[54] The FAO uses this funding to create programs and projects with several goals. Some projects target direct support for Member States to meet their Nationally Determined Contributions (NDCs) related to food and agricultural sectors through policy, capacity, and technology. Others facilitate access to finance for investments in CSA, development of Disaster Risk Reduction (DRR) programs, multi-country technical and policy exchanges, development of codes of best-practices and guidelines, strengthen institutional capacity to generate and collect information, and increase knowledge and technical support. DRR programs have been occurring throughout the world, including a program in St. Lucia that aims to mitigate risks to agriculture, fisheries, and forestry related to natural disasters.[55] The program offered training workshops for community-based adaptation and needs assessment for disaster risk management, as well as training for accessing financial services related to risk management in agriculture.

## *Key Issues*

Extreme weather events are expected to occur with greater frequency for the foreseeable future. The future of global food security will be determined by both the ability to develop plans of action to respond better to anticipated extreme weather events as well as international capacity to permanently and significantly decrease greenhouse gas emissions. FAO projects are a vital part of international climate change response and will serve to expand institutional knowledge and processes for reducing greenhouse gas emissions in agricultural centers while also providing resources, capital, and technology to assist developing countries in their efforts to implement CSA practices.

Targeting greenhouse gas emissions, however, is a necessary but not sufficient to ensure global food security. While more developed countries need to reduce their contributions to greenhouse gas emissions while maintaining food security, developing nations face difficult challenges in establishing regional food security. Such challenges include lack of access to financial services and deficiencies in existing safeguards against food

[51] UNFCCC, "Fact sheet: The Kyoto Protocol," United Nations Framework Convention on Climate Change.", 2011. http://unfccc.int/files/press/backgrounders /application/pdf/fact_sheet_the_kyoto_pr otocol.pdf
[52] Ibid
[53] UN, "Transforming Our World: the 2030 Agenda for Sustainable Development.:. Sustainable Development Knowledge Platform." 2015. sustainabledevelopment.un.org/post2015/transformingourworld.
[54] UN FAO, "Resource Partners", 2017. http://www.fao.org/partnerships/resource-partners/en/
[55] UN FAO, Peter Holmgren, "*St. Lucia DRR project", 2017.* www.fao.org/climatechange/73792/en/.

insecurity. If developing nations adopt dated practices of agricultural development that significantly increase emissions, because environmental concerns were not prioritized in the industrial-era, global climate change will accelerate and cause a further increase in the occurrence of extreme weather events. Developing nations are also most at risk to the effects of extreme weather events, often lacking infrastructural capacity to supplement disruptions to agricultural production. Lack of infrastructure is a symptom of many different conditions, including; conflict based destruction, systemic poverty, terrorism, and former reliance on colonial powers.

The following list highlights the key issues surrounding food security with the increase of extreme weather events:

- Attaining SDGs 1, 2, and 13 by 2030
- Identifying processes and capacity for greenhouse gas emissions reduction
- Implementing further usage of early warning systems in developing countries
- Supporting international, regional, national, industrial, and individual efforts to develop and implement emissions reducing processes and technology in Agriculture
- Developing infrastructure and capacity for food security in developing countries
- Identifying and planning for regional differences in the frequency and type of extreme weather events
- Preventing increased poverty to rural areas which economically rely on agricultural production

## *Case Study: Climate Smart Agriculture in Vietnam, India, and Senegal*

**Vietnam**

Vietnam has instituted a CSA focusing on rice cultivation that has helped 33,000 farmers increase production of rice while cutting costs and reducing emissions of methane gasses.[56] By replacing flood irrigation with alternative methods, farmers reduced costs by 20 percent while reducing emissions and increasing yields by more than 5 percent. The program Farmer Field Schools provided resources for local farmers to access certified seeds and information regarding irrigation management techniques in eight rice-growing provinces in the Mekong Delta.

**India**

A CSA approach to livestock management relating to the dairy industry in India helped to improve animal feed, nutrition, and resiliency was implemented in 15 states in India.[57] Cattle productivity was improved through breeding cattle that are more resilient to extreme heat and improving animal nutrition through the Ration Balancing Program. Feed cost was reduced by more than 10 percent while also reducing methane emissions.

**Senegal**

The West African Agriculture Productivity Program has helped Senegal initiate a CSA program that has developed seven high-yielding and drought-resistant varieties of sorghum and pearl millet. Yields from crops have increased more than 300 percent among farming cooperatives who accessed seeds from the program.

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[56] World Bank Group, Jim Yong Kim, 2015. http://documents.worldbank.org/curated/en/645981468189237140/pdf/100046-WP-PUBLIC-dislcose-7am-10-8-15-Box393216B.pdf

[57] Ibid

Farmers are also given climate-smart techniques for planting that reduce usage of water and fertilizer while improving productivity, thus decreasing costs as well as emissions of greenhouse gasses.

## *Conclusion*

Agricultural innovations have the opportunity to improve the conditions of impoverished communities, reduce the effects of climate change, and increase resiliency to extreme weather events. These opportunities are especially vital in achieving both the goals set out by the 2030 Agenda for Sustainable Development as well as the UN's founding charter which was established to maintain international peace and security. Challenges to food security are not new to developing and developed nations, but climate change and the increased occurrence of extreme weather events will pose new and more difficult challenges that must be met at the local, national, and international level. Sharing of information regarding the implementation of agricultural practices meant to mitigate risks caused by extreme weather events, as well as international partnerships for increased access to technological and methodological improvements, will help to ensure a future of secure access to food for the entire world.

## *Next Steps*

Renewed international cooperation to address climate change in recent years has given the international community a clear direction for moving forward on the issue. Progress on climate change is dependent on international cooperation to support, achieve, and enhance the goals set forth by the 2030 Agenda, including SDGs, and the Paris Agreement. For the FAO to achieve its goals in advancing these goals it will be useful to consider the following:

- What environmental factors pose the greatest risks to food security with increased frequencies of extreme weather events?
- What aspect of food security are most vulnerable to extreme weather events?
- How are different regions equipped or not to handle expected extreme weather events?
- What are the benefits and responsibilities for developed countries to ensure developing countries achieve food security without contributing further to climate change?

# II. Preserving Oceanic Life for Sustainable Fisheries

## *Introduction*

Oceans cover over 75% of the Earth's surface and in 2017 provided over 90 billion kilograms of food.[58] Beyond the providing a significant portion of the world's food, fisheries also the source of livelihood, trade, and recreation for millions of people.[59] Beyond being an essential part of global food production and the economy, the ocean is a key component of the global ecosystem. Regulating global temperatures, serving as the largest carbon sink, and providing a home for countless oxygen producing species.

Fishery and by extent oceanic health is dependent upon a series of different factors including temperature, overfishing, pollution, biodiversity.[60] The nature of oceans is such that vast majority is not under jurisdiction of any singular nation. While ocean pollution will come from one specific source it can easily spread into international waters or the sovereign waters of any member state. Oceanic health requires the coordination between all member states.

## *Key Documents*

Since 1994 the United Nations Convention on the Law of the Sea (UNCLOS) came into effect with the 60th member state ratifying the UNCLOS replacing four earlier UN treaties governing maritime law.[61] Currently 164 member states have ratified UNCLOS that establishes territorial waters and Economic Exclusion Zones (EEZ).[62] These territorial boundaries set the basis for what areas member states may claim as their own water and to what extent they have authority to utilize the resources available in the ocean. These resources can come in many different forms whether it is the marine life in the form of fish and crabs or mineral resources such as metal and oil deposits underneath the continental shelf.[63] The UNCLOS also outlines responsibilities that member states have to ensure that vessels within their territorial waters are following regulations in regards to safety and pollution.[64]

The fourteenth Sustainable Development Goal (SDG) is "conserve and sustainably use the oceans, seas, and marine resources for sustainable development".[65] The Secretary General's Report "Progress Towards the Sustainable Development Goals" outlines the progress that has been made towards achieving SDG 14.[66] The report specifically mentions 5.3% of the total ocean is currently designated under 'marine protected areas' which are key to ensuring oceanic sustainability.[67] However the report also notes that between 1974 and 2013 the percentage of marine fish stocks that were designated as sustainable fell from 90% to 68%.[68] Other criterion for measuring progress towards SDG 14 is outlined in the report.

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[58] Marine Bio, "Ocean Resources", 2017. http://marinebio.org/oceans/ocean-resources/index.aspx
[59] UN FAO, "The FAO Fisheries and Aquaculture Department and the UN agenda" http://www.fao.org/fishery/topic/16001/en
[60] *Ibid.*
[61] UN, "United Nations Convention on the Law of the Sea", 2017. https://www.un.org/Depts/los/convention_agreements/convention_historical_perspective.htm
[62] *Ibid.*
[63] *Ibid.*
[64] *Ibid.*
[65] UN, "Sustainable Development Goal", 2017. https://sustainabledevelopment.un.org/sdg14
[66] *Ibid.*
[67] *Ibid.*
[68] *Ibid.*

Following the 1992 International Conference on Responsible Fishing, there was a call for greater organized efforts to conserve oceanic life and develop sustainable fisheries. In response the 1995 FAO conference proposed and adopted the FAO Code of Conduct for Responsible Fisheries.[69] Even over two decades after the Code has been adopted it remains one of the most significant documents in regard to conservation of fisheries.[70] The FAO Code of Conduct for Responsible Fisheries remains the FAO document that has been translated into the most languages for wide spread accessibility to member states and their governments.[71] The document is crucial in helping governments establish policies and laws to ensure conservation of their fisheries.[72] The Code itself is not legally binding and is meant to working in conjunction with pre-existing international law.[73] The content of the Code of Conduct sets out principles and "international standards" for ensure policies are in line ensure the conservation, management, and development of resources. The economic and cultural significance of fisheries are recognized in the Code, as well as taking into consideration to unique biological characteristics of fishery resources.[74] All sessions of FAO Regional Fishery Bodies regularly review and work to improve implementation of the FAO Code of Conduct.[75]

Since 2002 the FAO has published a report "State of the Worlds Fisheries and Aquaculture" (SOFIA) every other year. This report provides valuable information in regard to the current state of the world's fish resources.[76] SOFIA provides specific data about the status of fishery resources including: the current production levels of the world's fisheries, the status of fishery fleets and livestock, and utilization and consumption of fishery resources.[77] The report also addresses specific issues such as strategies for reducing bycatch and adapting aquaculture strategies to handle the effects of climate change. Other studies in overview of fisheries and aquaculture are also highlighted in the report.[78] Finally, SOFIA address the progress and direction that has been made towards establishing sustainable fisheries on a global scale. The 2016 SOFIA paid special attention to how sustainable fisheries fit into the 2030 Agenda for Sustainable Development.[79]

## *Committee-specific Action*

The Food and Agricultural Organization has been a significant force in increasing fishery conservation efforts. Member states are supported by the FAO to develop and implement policies to ensure sustainable fisheries and aquaculture. This support comes in many different forms, for development the FAO has created Fishery and Aquaculture Country Profiles for 198 Member States. These profiles include statistics and indicators for each member state as to the health of the current fishery population and trends within the member state's fishing industry.[80] Between the information available in the country profiles and the standards set in the FAO Code of Conduct for Responsible Fisheries, the FAO can provide strong policy recommendations. To help with the implementation of conservation policies member states may request funding from the Assistance Fund under Part VII of the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of

[69] UN FAO, "Country Profiles", 2017. http://www.fao.org/fishery/countryprofiles/search/en
[70] *Ibid.*
[71] *Ibid.*
[72] *Ibid.*
[73] *Ibid.*
[74] *Ibid.*
[75] *Ibid.*
[76] UN FAO, "The State of World Fisheries and Aquaculture", 2017http://www.fao.org/fishery/sofia/en
[77] *Ibid.*
[78] *Ibid.*
[79] *Ibid.*
[80] UN FAO, "Fish Stock Trust Fund", 2015.
http://www.un.org/depts/los/convention_agreements/fishstocktrustfund/fishstocktrustfund.htm#Reporting obligation

the Sea also known as the Fish Stock Trust Fund.[81] Any developing member state that is a party to the agreement may apply for funding to assist in the implementation of policies and monitoring equipment to ensure the sustainability of fisheries.[82] The Fish Stock Trust Fund is under the purview of the FAO and contributions to the fund are voluntary from member states, international organizations, or other legitimate parties.[83]

The FAO has a mandate to promote and recommend national and international action towards the goal of fishery management and conservation. Through this mandate the FAO has developed and managed the creation of Regional Fishery Bodies (RFB) to promote international cooperation for the management and conservation of fisheries.[84] The FAO's role with RFBs is primarily an administrative one such as facilitating meetings, coordinating between RFBs and other UN bodies, and relaying information between all parties.[85] Since the implementation of RFBs their role has become increasing vital for fishery conservation, particularly in regards to building international consensus.[86] There are currently 53 distinct RFB working to building consensus strategies to minimize bycatch and illegal fishing while strengthening conservation efforts and dispute management.[87]

*Current Issues*

One of the largest issues facing fishery conservations is pollution both directly and indirectly. Direct pollution comes in many different forms most predominantly the pollution of plastic into the oceans. It is estimated that there is roughly 19 billion pounds of garbage in oceans the vast majority of it coming from land-based sources.[88] This plastic is capable of choking or entangling larger fish and sea mammals through digestion, additionally the very slow decay of the plastic and other materials leaves toxins in the surrounding water that can also poison fish populations. Micro-plastic pollution poses an additional threat to fish populations coming from either decay of larger plastics or improper waste management systems that are not designed to filter them out.[89] These small plastics build up in the food chain as they are consumed by small fish that are unable to process them and these fish are in turn eaten by larger fish and may be ultimately consumed by humans.

Indirect pollution can be even more complicated and difficult to manage than direct pollutants such as plastic. Oceans are becomingly increasingly affected by carbon emissions in the atmosphere.[90] Currently the ocean is acting like a carbon sink with increasing amounts of carbon dioxide entering the oceans directly from the atmosphere. The increased amounts of carbon dioxide make ocean water more acidic, which is particularly dangerous to shellfish and coral, both which are integral of the oceanic ecosystems.[91] Beyond acidification the greenhouse effect from increased carbon dioxide in the atmosphere result in increased ocean temperatures contributing to coral breakdown.[92] Nutrient pollution is becoming an increasing problem for ocean health, farms that can be miles away from the coastline contribute this pollution through the use of fertilizers. Water runoff

[81] *Ibid.*
[82] *Ibid.*
[83] UN FAO, "FAO and Regional Fishery Bodies", 2017. http://www.fao.org/fishery/topic/16918/en
[84] *Ibid.*
[85] UN FAO, "Role of Regional Fishery Bodies", 2016. http://www.fao.org/fishery/topic/16810/en
[86] *Ibid.*
[87] Mosbergen, Dominque "The Oceans are Drowning in Plastic", 2017. https://www.huffingtonpost.com/entry/plastic-waste-oceans_us_58fed37be4b0c46f0781d426
[88] *Ibid.*
[89] NOAA, "Ocean Accidification", 2016. https://www.pmel.noaa.gov/co2/story/Ocean+Acidification
[90] *Ibid.*
[91] *Ibid.*
[92] NOAA, "Nutrient Pollution", 2016. https://oceanservice.noaa.gov/facts/nutpollution.html

results in an excess of these nutrients into the water system eventually making it to the ocean.[93] The result is drastically low levels of oxygen and unnatural algae blooms that block sunlight from reaching plant life.[94]

Direct and indirect pollution become increasingly difficult to handle because of the nature of the pollutants. Plastics in the ocean quickly fall victim to the ocean's currents and can end up back on the coastline but often end up in a circular current in the middle of the ocean. Massive garbage patches form in the center of oceans outside the territorial waters of any member state.[95] Similarly, carbon emissions or nutrient runoff can have a source that is a significant distance from the coast but can pollute a significant area outside of their territorial claim.

The breakdown of a fish population also poses a significant problem for ensuring sustainable fisheries and aquaculture. There are a multitude of threats to the balance of fish populations, the most notable being illegal fishing. This term encompasses a variety of different kinds of fishing specifically illegal, unreported, and unregulated (IUU) fishing. IUU generally refers to smuggling of fish to bypass either bycatch or fishing limits that are designed to safeguard fishing populations.[96] These limits are set to make sure that populations don't fall to a dangerous level and inspections are set at many ports in member states but there are economic incentives for fisherman to avoid these inspects to sell more fish. Cheaper catching methods may also be implemented by fishing vessels despite having a worst result for bycatch going against set regulations.[97]

The introduction of new species can be equally devastating to a marine ecosystem. A new fish may not have any natural predators when introduced to a foreign environment has the potential to overrun native species by crowding them out. This problem is not specific to fish but can also can occur just as easily with plants or microorganisms such as algae.[98] With increased globalization of fishing and trade this has become an increasing concern coupled with the changes in ocean temperature across the globe.[99]

Both the issue of IUU and invasive marine species are further compounded when taking into consideration of importance of biodiversity to marine ecosystems. Fish populations are often threatened by IUU and invasive species but even done within seemingly safe levels can result in deteriorating feedback that can further decimate fish populations.[100] Biodiversity can be threatened in two key ways, first through the diversity of species in the ecosystem. The removal of a species from an ecosystem can result in domino effect destabilizing other fish populations.[101] Genetic diversity of the population also poses a significant problem. Even if a population is within a level in which they could theoretically increase from, the population could still breakdown from lack of genetic diversity within the starting population.[102]

## *Conclusion*

[93] Mosbergen, Dominque "The Oceans are Drowning in Plastic", 2017. https://www.huffingtonpost.com/entry/plastic-waste-oceans_us_58fed37be4b0c46f0781d426

[94] NOAA, "Illegal, Unreported, and Unregulated Fishing", 2016. http://www.nmfs.noaa.gov/ia/iuu/iuu_overview.html

[95] *Ibid.*

[96] *Ibid.*

[97] Reef Resillence Network, "Algea Pollution", 2015. http://www.reefresilience.org/coral-reefs/stressors/invasive-species/algae/

[98] *Ibid.*

[99] Hammer, Monica, AnnMari Jansson, and Bengt-Owe Jansson. "Diversity Change and Sustainability: Implications for Fisheries." *Ambio* 22, no. 2/3 (1993): 97-105. http://www.jstor.org/stable/4314053.

[100] *Ibid.*

[101] *Ibid.*

[102] *Ibid.*

Fisheries are a vital source of food and integral to the global economy but fisheries have become increasingly unsustainable in recent decades. The challenges facing developing sustainable fisheries range from IUU fishing to ensuring biodiversity to nutrient runoff from farms. No matter the origin of these obstacles, much of the ocean is not the territorial water of any member states but a shared resource of the ocean. The nature of these challenges and the nature of this resources must be met with an international effort to secure sustainable fisheries.

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