



Campion School MUN

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SPECIAL POLITICAL AND DECOLONIZATION (GA4)

THE USE OF SCIENCE, TECHNOLOGY,
AND INNOVATION IN ACHIEVING THE
SUSTAINABLE DEVELOPMENT GOALS

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**International
Community**

**Memorable
Experience**

**Challenges
Skills**



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PERSONAL INTRODUCTION

Esteemed Delegates,

My name is Nickolas Artinos and it is both a pleasure and an honor to serve as Co-Chair in the Special Political and Decolonization Committee in the 6th session of the Campion School Athens Model United Nations. With this being my first time serving as a Student Officer and my 7th conference in total, I have realized that participating in MUN for the past 3 years was an experience that truly altered the way I see things currently. It is unquestionable that MUN is an extremely rewarding and invaluable activity and I wish that this session will be a tremendous memory for all.

The Sustainable Development Goals are targets aimed to protect the planet, to end poverty and to ensure that all people enjoy peace and prosperity. Through this study guide, you will be provided with essential knowledge on the Sustainable Development Goals and factors that lead to the UNDP (United Nations Development Program) setting these goals. As the study guide is solely the starting point of your preparation, it is highly advisable that you extend your research beyond and that you are fully informed concerning your delegation's policy.

Should you come up with any question with regards to the topic or the procedures in general, feel free to contact me through my email address (nickartinos@gmail.com). I wish you all good luck with your preparation and I hope for fruitful and challenging debates to take place during our session. I am looking forward to meeting you all.

Kindest regards,
Nickolas Artinos



TOPIC INTRODUCTION

The Sustainable Development Goals are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity¹. The SDGs were built around the successes of the Millennium Development Goals. The MDGs had 8 targets, with each one having a specific date for achieving it. The new Sustainable Development Goals had some interconnected goals with the Millennium Development which made it easier to focus on these issues. The Sustainable Development goals were introduced in January 2016, and any actions taken to complete any of these goals will be funded until 2030. The United Nations Development Program (UNDP) is uniquely placed to carry out the goals through 170 countries and territories. The Sustainable Development Goals are described as targets that have clear guidelines to improve life in a sustainable way, for the future generations. “Poverty Eradication is at the heart of the 2030 Agenda, and so is the commitment to leave no-one behind” stated the UNDP’s Administrator².

¹ United Nations Development Program, “What are the Sustainable Development Goals?”

² UNDP Administrator, Achim Steiner

BACKGROUND INFORMATION

The Millennium Development Goals

In the year 2000, leaders from 189 countries agreed on a new vision for the millennium. The key problem was poverty, and they wanted to tackle all of its forms. So they made a list of 8 goals, which had a completion date of 2015³. The leading organization was the UNDP (United Nations Development Program). The UNDP funded multiple countries, to aid achieve these goals throughout the 15 years; it also acted as a scorekeeper, helping countries track their progress. A lot of progress was made throughout these 15 years and here are some of the key achievements:

- More than 1 billion people have been lifted out of extreme poverty (since 1990)
- Child mortality dropped by more than half (since 1990)
- The number of out of school children has dropped by more than half (since 1990)
- HIV/AIDS infections fell by almost 40 percent (since 2000)⁴



The UN's Millennium Development Goals "Logo", used for public information purposes to promote the goals.

Despite the multiple achievements that many countries made, there has been some criticism about these goals too. A general dissatisfaction about these goals was that there was no actual justification behind these objectives and there was a lack of analytical power⁵. Many countries claimed that these 8 goals didn't have very specific targets and didn't have many indicators for quality within the countries. It is speculated

³ UNDP's "Background of the Sustainable Goals"

⁴ UNDP's "Background of the Sustainable Goals"

⁵ Analytical Power – The ability to visualize, articulate, conceptualize or solve both complex and uncomplicated problems by making decisions that are sensible given the available information. Wikipedia – "Analytical Skill"



that the MDGs did not stress enough on tracking gender inequalities in poverty reduction and employment as these gender goals were only related to health, education, and political representation⁶.

Not all targets were reached, and that's why the UN created the Sustainable Development Goals which tackled some of the incomplete MDGs and faced new challenges that would ultimately end poverty, protect the planet and ensure that all people enjoy peace and prosperity.



The Millennium Development Goals

⁶ Wikipedia "Millennium Development Goals", "Women's Issues"



THE SUSTAINABLE DEVELOPMENT GOALS

Towards the end of the year 2015, people were questioning if the goals were completed. Everyone agreed that that the MDGs provided a focal point for governing bodies, and had set a framework for countries to develop policies and aid programs. But was there was need of new goals for the 2030 agenda. The MDGs had various amounts of problems which made it hard for countries to complete these goals. The MDGs had a fixed goal to eradicate hunger and poverty but it failed to consider the root causes of these important problems. In theory the MDGs applied to all countries, however in reality they were considered targets for poor countries to achieve, with financial aid from the wealthy states⁷. So on 25 September 2015, the 193 countries of the UN General Assembly adopted the 2030 Development Agenda titled "Transforming our world: the 2030 Agenda for Sustainable Development". The SDG had 17 universal goals which in total had around 169 targets within these goals.

This time the UN made it clear that they wanted to track each country’s progress better so they created a SDG index score, which ranked every country (with a given score) based on their current status on the goals. The SDG Index aggregates available data on all SDGs into a composite index to provide countries with a quick assessment of how they are performing relative to their peers⁸.

The UN also stated that the top ranks does not mean that the countries has achieved the SDGs, but are on the right path for achieving them.⁹

Click [here](#) and find a report each of your countries

Rank	Country	Score
1	Sweden	85.6
2	Denmark	84.2
3	Finland	84.0
4	Norway	83.9
5	Czech Republic	81.9
6	Germany	81.7
7	Austria	81.4
8	Switzerland	81.2
9	Slovenia	80.5
10	France	80.3

The top 10 countries ranked by their SDG

⁷ The Guardian – “Sustainable development goals: all you need to know”

⁸ UN’s official statement about the SDG Index

⁹ More about the index scores - <http://www.sdgindex.org/assets/files/2017/2017-SDG-Index-and-Dashboards-Report--full.pdf> (Page 20 for the ranks)

The Goals

1 NO POVERTY



“End poverty in all its forms everywhere”

As mentioned before, with the MDGs, countries all around the world managed to lift more than 1 billion people out of extreme poverty (since 1990). But there are still multiple problems around poverty, as 1 in 5 people still live on less than the target figure of US \$1.25 a day. As stated, “Poverty is more than the lack of income or resources, people live in poverty if they lack basic services such as healthcare, security, and education”. Furthermore, children make up the majority of those living in extreme poverty, which is a major problem because the most devastating effects of poverty are experienced by them. Achieving this goal is hampered by growing inequality, increasingly fragile statehood and the impacts of climate change¹⁰

2 ZERO HUNGER



“End hunger, achieve food security and improved nutrition and promote sustainable agriculture”

Eradicating extreme hunger was one of the goals listed in the MDGs. As known it wasn't completed and there is a lot of work that needs to be done. Undernutrition contributes to nearly half (45%) of deaths in children under 5 years old (3.1 million). But undernutrition also effects the children's brain and physical development and puts them at further risk of disease and death. As stated, the first step towards completion is to double the agricultural productivity with flexible agricultural practices.

3 GOOD HEALTH AND WELL-BEING



“Ensure healthy lives and promote well-being for all at all stages”

Focusing on how to reduce mortality ratios and the roots of diseases is the main purpose of goal number 3. Throughout 2000 to 2015 the MDGs helped countries focus on reducing child mortality, with goal number 2 (Reduce child mortality). Between these years, the worldwide under-five mortality rate decreased by 47%. But the number of children dying under 5 years old is very high at 6.6 million deaths in 2016. This clearly indicates that there is a lot of work that needs to be done to counter this goal. This goal also aims to reduce maternal mortality as well as universal health coverage.

¹⁰ Wikipedia – Sustainable Development Goals- Goal 1

4 QUALITY EDUCATION



“Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”

The MDGs provided a focal point for countries to focus on education, but it wasn't enough. Major progress was made in accessing education throughout the world, but there is a lack of quality as well; which is hard to tackle. Additionally, progress is difficult to track, as more than half of the countries worldwide have insufficient data of progress for goal number 4.

5 GENDER EQUALITY



“Achieve gender equality and empower all women and girls”

The UN has stated that "Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world." Improvement can be made in sectors such as: better access to education, health care, work, representation in political and economic decision-making processes¹¹. The world is moving in the right direction towards equal rights, as 143 countries guaranteed equality between men and women, but 52 countries still need to take actions to tackle this problem fully.

6 CLEAN WATER AND SANITATION



“Ensure availability and sustainable management of water and sanitation for all”

Safe drinking water and hygienic bathrooms are very important in the workforce as they increase economic productivity and mainly protect people from diseases. It is important that countries focus on schools and workplaces. In the year 2017 research showed that 4.5 billion people did not have a safely managed sanitation¹², meaning that there is a lot of improvement that can be done.

7 AFFORDABLE AND CLEAN ENERGY



“Ensure access to affordable, reliable, sustainable and modern energy for all.”

This goal is targeting the “removal” of multiple fossil fuel power plants all around the world. Fossil fuel power plants emit around 13% of global GHG (Greenhouse Gas Emissions). Countries around the world try to ensure a long term sustainability by seeking to reduce GHG emissions while at the same time, keeping productivity high. This is a hard task to do but there are multiple ways to tackle it. One solution is solar energy, which also happens to be renewable and clean energy.

¹¹ Wikipedia – Sustainable Development Goals – Goal 5

¹² Wikipedia – “Improved sanitation”

8 DECENT WORK AND ECONOMIC GROWTH



“Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”

For LEDCs, the UN has set an economic target of increasing its GDP by 7% every year. But achieving this goal every single year until 2030, requires a lot of productivity. This may be hard for some countries, as it will require diversity, new technology alongside innovation, entrepreneurship and the growth of multiple businesses around the country. Engaging in this goal may also help increase the average value of food production.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



“Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation”

The building of infrastructure and the promotion of a sustainable industrialization mainly is targeted for employment of people. Building infrastructure opens opportunities for all, and allows the unemployed to work and have a sustainable income for their families.

10 REDUCED INEQUALITIES



“Reduce income inequality within and among countries”

The main target of this goal is to reduce the cost of exporting goods from LEDCs. Major progress has been made, in 2005 only 41% of the products coming from LEDCs were duty-free, ten years later almost 65% of all products were duty free. This target also deals with political stability and the absence of violence/terrorism.

11 SUSTAINABLE CITIES AND COMMUNITIES



“Make cities and human settlements inclusive, safe, resilient, and sustainable”

This goal’s target is to ensure access to safe and affordable housing, meaning that every country is going to try and decrease the population in urban environments living in slums or informal settlements. Between 2000 and 2014 the proportion fell from 39% to 30%, clearly indicating that countries are on a good path to achieving this target. This goal also promotes transportation systems which means that roads and railways must be built, creating job opportunities.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



“Ensure sustainable consumption and production patterns”

The targets of Goal 12 include using eco-friendly production methods and reducing the amount of waste. By 2030, national recycling rates should

increase, as measured in tons of material recycled. Further, companies should adopt sustainable practices and publish sustainability reports.¹³

13 CLIMATE ACTION



“Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy”

This goal aims to reduce climate change and generally counter the issue of air pollution. Multiple countries (195) have signed the Paris Agreement, which is a deal that aims to a) Decrease the global average temperature to well above 2 °C above pre-industrial levels b) Increase the ability to adapt to the adverse impacts of climate change and foster climate resilience and c) Make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development¹⁴

14 LIFE BELOW WATER



"Conserve and sustainably use the oceans, seas and marine resources for sustainable development."

As known, oceans cover around 70% of the Earth's Surface. The climate, rainwater and drinking water are all “organized” the currents and the ocean's temperatures, meaning that the sea is essential for making our planet livable. There has been an increase of acidity in the oceans by 26% since the industrial revolution, thus creating a problem for the 3 billion people that depend on marine life for their livelihood Nations have enforced many rules that urge citizens to aid the oceans by reducing their usage of plastics and their energy consumption¹⁵.

15 LIFE ON LAND



"Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss."

This goal expresses the targets for preserving the biodiversity of deserts, forests, and mountain eco-systems¹⁶. The goal also conveys how damaging deforestation is in certain areas and the solutions on tackling deforestation. Another target included in this goal is to help restore degraded forests which have been affected by floods.

¹³ Wikipedia – Sustainable Development Goals – Goal 10

¹⁴ Wikipedia – Paris Agreement - Aims

¹⁵ Wikipedia – Sustainable Development Goals – Goal 14

¹⁶ Wikipedia - Sustainable Development Goals – Goal 15

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

“Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.”

Reducing violent crime, sex trafficking, forced labor, and child abuse are clear global goals¹⁷. This goal requests for stronger judicial systems that will enforce laws well enough to serve justice for all crimes and work towards a more peaceful society. A few targets are to end violence and torture of children, sex trafficking and forced labor. This goal also targets universal legal identity and birth registration, ensuring the right to a name and nationality, civil rights, recognition before the law, and access to justice and social services¹⁸.

17 PARTNERSHIPS FOR THE GOALS

“Strengthen the means of implementation and revitalize the global partnership for sustainable development”

Increasing international cooperation is something extremely important on achieving all the millennium development goals. It is required that countries work together and aid each other to provide a better and safer future for the youth. Partnerships could be developed in order to share technology, financial support and expertise which could help all countries on achieving the 17 goals by 2030.

The use of Science, technology and innovation

"Science, technology and innovation are, alongside trade, the most powerful forces driving the progress that the world has witnessed in recent years in terms of growth, poverty reduction and overall human development." Emphasized Ms. Shamika N. Sirimanne, Director of UNCTAD's Division on Technology and Logistics.

The UN has clearly stated that harnessing science and technology for the SDGs requires a multi-sectoral and multi-disciplinary approach with organization and collaboration.

There have been multiple recommendations for UN bodies and national policymakers, including calling for the need for technology assessment and foresight mechanisms, broadening the policy framework for science, technology, and innovation, and exploring new innovative financing models¹⁹.

Information and Communication Technologies have also become a major transformative factor in social and economic development. The potential of Information and Communication Technologies to rise existing technologies, to advertise more broad development and take into account the socioeconomic and political

¹⁷ Wikipedia – Sustainable Development Goals – Goal 16

¹⁸ Wikipedia – Sustainable Development Goals – Goal 16

¹⁹ UN – Trade and Development



context of countries, emphasizes the need for private investment and innovation-led entrepreneurship in this sector

Science

The 17 goals that the SDG's aim to tackle are all interlinked. As stated, to achieve one goal, other goals must also be achieved. This means that researchers need to work across multiple sectors. There are many barriers that come with this problem, such as non-inter-operable data systems, to sharing knowledge between sectors in the academic, civil society and policymaking spheres²⁰. To establish effective, green solutions to address the pollution and climate problems, energy and food crises, science research and development capacities for sustainable development must be strengthened²¹

Here are some milestones related to science.

Name and Date	Description
GA 19th Special Session - Implementation Agenda 21. Science – 1997	Decisions related to science were taken by United Nations General Assembly at its Special Session to review the implementation of Agenda 21.
CSD-5: Science – 1997	CSD-5 was held in 1997 and began negotiating the UNGASS outcome. The Report of the Secretary General "Science for sustainable development" was among the documents before the Commission at its fifth session.
CSD-6 (Chapter 1B- Decision 6/3) – 1998	Decisions related to science were adopted by the Commission on Sustainable Development at its sixth session in 1998.
JPOI -2002	The Plan of Implementation adopted by WSSD underlined the importance of science-based decision-making, inter alia, by: integrating scientists' advice into decision-making bodies; partnerships between scientific, public and private institutions; improved collaboration between natural and social scientists, and establishing regular channels for requesting and receiving advice between scientists and policy makers; making greater use of integrated scientific assessments, risk

²⁰ The Conversation - How scientists can help make the sustainable development goals a reality

²¹ UNESCO – Science for Sustainable Development



	assessments and interdisciplinary approaches; increasing the beneficial use of local and indigenous knowledge.
2030 Agenda – 2015	Sustainable development goals were created, aimed to end poverty, protect the planet and ensure that all people enjoy peace and prosperity ²²

✚ Technology

Technology and Science are the major pillars of the implementation of the SDGs. The research and development of environmentally sound technologies in the context of a Green Economy is also closely linked to other core elements and means of implementation, including innovation, business opportunities and development, trade of environmental goods and services, finance and investment, and institutional capabilities²³.

Here are some milestones related to technology.

Name and Date	Description
JPOI Technology – 2002	The JPOI first mentions technology in its paragraph 4 when it identifies technology transfer as one of the areas in continued need "for a dynamic and enabling international economic environment supportive of international cooperation" to reduce the gap between developed and developing countries.
Copenhagen Accord: Call for technology, finance and capacity building support – 2009	The Copenhagen Accord is a political agreement which speaks to all of the core elements of the Bali Action Plan: a long-term goal; mitigation; adaptation; finance; technology; forests; and measurement, reporting and verification.
UN Summit – 2010	The UN Summit on the MDGs: Promotion of development and dissemination of appropriate, affordable and sustainable technology and their transfer

²² All info from the table - Sustainable Development Knowledge Platform - Science

²³ Sustainable Development - Technology



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POLITICAL: Achieving Sustainable Development Goals

2030 Agenda: Sustainable Development – Technology – 2015

In 2015 the SDGs were introduced and throughout the introduction, technology was heavily emphasized on completing the goals.



POSSIBLE SOLUTIONS

General

Agriculture, Food and Water

Biotic Stress - Biotic stress is stress that occurs as a result of damage done to an organism by other living organisms, such as bacteria, viruses, fungi, parasites, beneficial and harmful insects, weeds, and cultivated or native plants²⁴. This can be solved by the use of, disease or pest-resistance crops, pesticides, herbicides and tilling machines. There are other crop stresses that could be detected by infrared sensors too.

Improving crop productivity - There is an inability on the prediction of when and how to farm. This is mainly caused by weather changes that affect the agriculture largely. This can be solved by knowing the forecast, which could aid farmers on what to farm. This is solved by the use of weather-forecasting technologies and by hyperspectral imaging²⁵ based on satellites.

Automated agriculture – This is a technology that hasn't fully been developed yet, and is still in research. It is said that automated agriculture will help people with agriculture by being efficient, convenient, and more productive. Another major advantage is that by using automated agriculture, sensors can detect changes or stresses on the crop, and can act immediately based on the problem. The disadvantages are that it will be expensive, and can need high maintenance at the start meaning that some countries/farmers cannot afford this new technological advancement.

Farming in urban areas – Also known as “City Farming”, is the practice of cultivating and distributing food around a town or city²⁶. Farms need large plots of land and this is a problem for large cities. Technology has allowed us to use to farm in large cities by using methods: Indoor farming, vertical farming, aquaponics²⁷ and low cost greenhouses.

Lack of water availability – This is a big problem in LEDCs and is one of the problems that the MDGs try to tackle. This could be solved by: Water storage technologies, rainwater harvesting mechanism (in some countries), reusing wastewater and using water efficiently.

²⁴ Wikipedia – “Biotic Stress” - Definition

²⁵ Processed information across the electromagnetic spectrum, used to obtain high quality images for the purpose of finding objects, materials, or to predict the forecast.

²⁶ Wikipedia – “Urban agriculture” - Definition

²⁷ “Aquaponics” is a combination of aquaculture, which is growing fish and other aquatic animals, and hydroponics which is growing plants without soil



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