

Y20 POSITION PAPER

CREATED BY
THE MEMBERS OF THE
2019 MODEL G20
JAPAN TASK FORCE

Spring 2019


Knovva
Academy

OUR PREAMBLE

We are the 2019 Model G20 Task Force. From the 21st of May to the 1st of June, 2019, we met in Tokyo, Japan to represent the world's teenagers in international dialogues on the State of Teenagers, Future of Work, Business and the Environment, and International Trade.

We are all between 15 and 18 years old, and come from a variety of educational, socioeconomic, and cultural backgrounds. We hail from twelve countries around the world, spanning six continents. We come from Japan, China, Indonesia, Mexico, Colombia, Brazil, Egypt, Greece, Ukraine, Australia, the United Kingdom, and the United States. Some of these countries are not members of the Group of 20 (G20).

Within this position paper, we present our beliefs, observations, and policy recommendations from the perspective of teenagers, who we directly represent within a body of discourse of the G20. We submit this paper for the consultation of the Youth 20 (Y20) and various international organizations.

We would like to emphasize the importance of allowing not only youth, but teenage voices to be directly represented in deliberations of global issues that affect us. We believe that through our input, more teenagers and youth will be inspired to participate in international affairs and political processes. We would like to thank the G20, Y20, and Knowva Academy for giving us the opportunity and privilege to participate in these discussions.

This preamble states the beliefs we hold, which have played a significant role in the policy recommendations that we make in this position paper. We recognize that diversity cultivates progress and we condemn all forms of discrimination. Key changes must be made to ensure that future workplace and world markets are inclusive, equitable, and offer opportunities regardless of one's background. These changes span the realms of politics, economics, and education. But to ensure that there is a future to work towards, governments and businesses must take action to provide a sustainable environment for posterity.

Finally, our work is shaped by our responsibility to build a better world than our own, not only for the less fortunate, but also following generations.

STATE OF TEENAGERS

Teenagers are one of the most overlooked and disenfranchised portions of the global population. As adolescents aged ten to nineteen comprise 1.2 billion people,¹ any issues that affect them highly concern all of humanity. Now, more than ever, the world depends upon strong future generations to not only address global crises, but also to work on creating a feasible future for all peoples. Youth can pave a sustainable road for all generations to come by becoming involved in the world of today.

There are many issues that disproportionately affect teenagers, including child labor, poverty, child marriage, and poor health. Lack of education correlates with a plethora of destructive circumstances that shape these very issues. Currently, 39% of the world's poor population have no formal education or any education at all. In 2015, 114 million people lacked reading and writing skills. In 2016, 263 million children were out of school, most of them due to political conflict in their country.²

One third of girls in the developing world get married before the age of 18.³ Unfortunately, young girls are often victims of child marriage. This is largely caused by a global trend of girls lagging behind boys in literacy rates and access to education. Both child marriage and child labor interfere with education and development. It is widely accepted that universally expanding secondary education "could virtually end child marriage."⁴ An estimated 110 million people worldwide are child laborers, most of whom work for 43 or more hours per week.⁵ As a result, less than 15% of poor children attend school.⁶ In addition, many children encounter many health issues that mainly stem from malnutrition and a lack of resources.

1 "Adolescent Demographics." UNICEF DATA. Accessed May 29, 2019.

<https://data.unicef.org/topic/adolescents/demographics/>.

2 "Quick Facts About Education." Compassion International. Accessed May 30, 2019. <https://www.compassion.com/poverty/education.htm>.

3 "Child Marriage Facts and Figures - ICRW | PASSION. PROOF. POWER." ICRW. Accessed May 30, 2019.

<https://www.icrw.org/child-marriage-facts-and-figures/>.

4 "Missed Opportunities: The High Cost of Not Educating Girls." World Bank. Accessed May 30, 2019.

<https://www.worldbank.org/en/topic/education/publication/missed-opportunities-the-high-cost-of-not-educating-girls>.

5 "Education Data." Global Partnership for Education. Accessed May 30, 2019.

<https://www.globalpartnership.org/data-and-results/education-data>.

6 Ibid.

In 2016, approximately 169 million teens lived in extreme poverty,⁷ and nearly 45% of them were overweight or obese.⁸ Expanding educational opportunities is a key method to address these issues and prevent future generations from inheriting these same circumstances.

Youth are being excluded from policy-making discussions that directly involve them. The limited voice of youth both results from and causes these issues. To find a way to empower youth voices and use them to address issues in the global scheme, we suggest the following policies:

1 Create Youth 20-esque platforms at the international and country level for people aged 12 to 18 to share ideas addressing global and national issues, and integrate teenagers more into policy and decision-making processes.

Youth voices have been welcomed in various global organizations, such as the G20 and the United Nations. However, a platform that exists solely for the consolidation of youth voices around the world that vary across regions and age demographics does not yet exist. Other platforms are structured around distinctions based on nationality or economic power, both lumping together and marginalizing different youth sectors. By creating a platform specifically dedicated to youth perspectives, more and potentially better ideas can be synthesized.

2 Acknowledge how fundamentally access to education and childhood poverty affects a teenager's potential, and increase efforts to maximize that potential.

Education is a basic human right, and according to some estimates, “one extra year of school increases an individual's earnings by up to 10%.”⁹ We call upon the global community to continue supporting public policies that empower youth by removing the obstacles that disenfranchise youth—such as poverty, child labor, and child marriage. We believe that young people must be given agency in creating their tomorrow. Advancing the state of global teens improves not only the humanity of today, but the humanity of tomorrow.

7 “#YouthStats: Hunger and Poverty - Office of the Secretary-General's Envoy on Youth.” United Nations. Accessed May 30, 2019. <https://www.un.org/youthenvoy/hunger-poverty/>.

8 “23 At-Risk Youth Statistics That Prove the Value of Youth Development.” Social Solutions. December 10, 2018. Accessed May 30, 2019. <https://www.socialsolutions.com/blog/at-risk-youth-statistics/>.

9 “The Benefits of Education.” Global Partnership for Education. Accessed May 30, 2019. <https://www.globalpartnership.org/education/the-benefits-of-education>.

FUTURE OF WORK

The currents of change that shape the dynamics of work and our future are numerous, intricately connected, and unimaginably complex. These currents are driven by changing technology, climate, globalization, and demographic composition. The present state of the world and the education systems youth are enrolled in are failing to prepare us for the future we will work in.

In 2017, the global youth unemployment rate was 12.1%.¹⁰ A fifth of youth are not in school, employed, or in training; approximately 75% of these youths are women.¹¹ Of youths who are employed, three-quarters work in the informal economy, especially in the developing world.¹² More than two-thirds of employed youth today are wage earners who may not have job security or stability.¹³ The global percentage of youth will decline to 15.2% by 2030, while people aged 65 years and above will increase to 12%.¹⁴ These conditions present significant challenges; the following policies that seek to address some of them align with many Sustainable Development Goals.

1 Shift focus in future of work research and dialogue to include least developed countries (LDCs).

Developments in technology will have the greatest industry impact on agriculture, where 60% of workers in LDCs work.¹⁵ Approximately 80% of the world's youth live in LDCs, where youth unemployment is about 10%.¹⁶ At least 8% of agricultural jobs that will exist in 2030 do not exist today,¹⁷ but for LDCs to truly economically flourish, they need **more job opportunities in multiple sectors**, alongside gains in raw productivity.

10 "Addressing the Situation and Aspirations of Youth" Global Commission on the Future of Work. Accessed May 30 2019.

https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_618164.pdf

11 Ibid.

12 Ibid.

13 Ibid.

14 Ibid.

15 "LDC's and the Technological Revolution" The United Nations. Accessed May 30 2019.

<https://www.un.org/ldcportal/ldcs-and-the-technological-revolution/>

16 Ibid.

17 "How will Automation Affect Jobs, Skills, and Wages" McKinsey & Company. Accessed May 30 2019.

<https://www.mckinsey.com/featured-insights/future-of-work/how-will-automation-affect-jobs-skills-and-wages>

2 Restructure employment laws at the country level to accommodate upcoming changes in the job market and promote social equity. Funding should come from a combination of government subsidies and business compensation adjustments.

More than 60% of the world's employees work in the informal economy.¹⁸ Temporary employment, rather than open-ended contracts, is becoming increasingly common, particularly in developed countries.¹⁹ Workers will simultaneously work on various tasks in different companies.²⁰ In Japan and France, it is predicted that working side businesses, side jobs, and multiple jobs will become common.²¹ Increasing digitization and automation of work tasks account for a large portion of this trend.

a. Governments should create **new job classifications** that account for projected labor market shifts, particularly the rise of **self-employment**.

- i. Governments should perform a comprehensive study of the characteristics of freelance workers and create country-level definitions of freelance work and/or self-employment with the appropriate legal categorizations.
- ii. Governments should examine how to close tax-related loopholes in reporting freelance work and taxing related salaries.
- iii. Civil society and freelance workers should create a general union or explore new processes of collective action in employee-employer negotiation processes.

Many workers no longer regard life-long full-time employment as an aspiration. About 84% of millennials report some degree of flexible working conditions and 39% say their organizations offer highly flexible work environments.²² While workplaces increase in flexibility, governments must ensure that workers do not experience lower employment security.

18 "Figure 2f From: Irimia R, Gottschling M (2016) Taxonomic Revision of Rochefortia Sw. (Ehretiaceae, Boraginales). Biodiversity Data Journal 4: E7720. <https://doi.org/10.3897/BDJ.4.e7720>." doi:10.3897/bdj.4.e7720.figure2f.

19 Ibid.

20 Ibid.

21 "Addressing the Situation and Aspirations of Youth" Global Commission on the Future of Work. Accessed May 30 2019. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_618164.pdf

22 "Deloitte Global Millennial Survey 2019." Deloitte. May 24, 2019. Accessed May 30, 2019. <https://www2.deloitte.com/global/en/pages/about-deloitte/articles/millennialsurvey.html>.

b. Government programs that promote **“flexicurity,”** a combination of workplace flexibility and job security, should be created.

i. Governments should set a maximum limit to overtime hours to prevent fluid working conditions from making employees work indefinitely.

ii. Governments should implement social support programs to form a safety net for people switching jobs in our increasingly fluid labor economy.

c. Reform work compensation to be more **equitable** and meet **minimum standards** for monetary and temporal costs of living, establishing universal rights and increasing workplace productivity.

i. All jobs should have paid **vacation, parental, and physical and mental health leave**; allotted time should be reasonable and distribution should be **equal** regardless of age, gender, and other distinctions.

ii. **Close the gender wage gap** through creating/encouraging a combination of regulatory and cultural shifts.

1. Countries should pass laws requiring businesses to not factor employees taking parental leave into promotion decisions.

2. Businesses should implement unique regulations that fulfill this requirement while being cognizant of their unique situation/challenges.

a. Example: a large corporation that provides data analysis services with a human resources department must assign different managers to oversee parental leave and promotions; time taken off for parental leave cannot be included in the promotion file; entire firm manages the network to prevent excessive work outside the office

iii. Create and/or **increase minimum wages.**

1. Quantity of wages should support basic living necessities (which include but are not limited to shelter, food, utilities, transportation, and insurance) for employees after taxation.

2. Quantity of wages should **correspond to increases in the gross domestic product** and currency inflation of the country.

- d. Implement voluntary systems that incentivize people to **work past the age of retirement** as life expectancy rises.

Social demographics are changing so that the elderly will occupy a much larger share of the population²³ in the future. The number of people who are 65 years of age or older is on the rise and projected to increase to 18.5% by 2030; simultaneously, those of working age are projected to decline to 66% of the overall population. Additionally, the birth rate has decreased from 3.15 to 1.79 per family over the past 20 years, which does not meet the population-sustaining requirement of 2.1.²⁴ It is imperative that governments adopt newer methods and strategies of pension as well as methods to deal with elderly workers, for not only the employment of older individuals, but also to reduce the impact on welfare services.

- i. Countries could model such programs after Kosei Nenkin, or the National Pension System in Japan, wherein people past the age of retirement earn a higher, government-subsidized salary for working.

- 1. The financing of this method is dependent on the country's decision.

3 Restructure education focuses to prepare students for changing workforce demands and equip them with 21st century skills.

Current education systems foster “hard skills” that do not adequately prepare students for the future job market. By 2030, a third of the constituent activities in 60% of occupations will be automated.²⁵ We should shift education prioritization from quantitative scores to teaching students soft skills that will be in great demand in an automated future. Holistic incentives must be created to encourage students to pursue extracurricular opportunities that foster these soft skills; a potential incentive is to reform college admissions to place high value on extracurriculars. Schools and businesses must reconceptualize the process of learning as a life-long, non-linear process and make corresponding reforms. Finally, the educational access remains a barrier that prevents people in low-income or rural areas from accessing opportunities. Countries worldwide should adopt grant-based micro-financing programs that incentivize and financially allow families to let their children go to school.

23 “Pensions at a Glance” OECD. Accessed May 30 2019.

https://www.oecd-ilibrary.org/docserver/pension_glance-2017-en.pdf?expires=1559090721&id=id&accname=guest&checksum=79D695DE59173FED42C7985215E0A900

24 Ibid.

25 “Internet Matters: The Net’s Sweeping Impact on Growth, Jobs, and Prosperity” McKinsey & Company. Accessed May 30 2019.

<https://www.mckinsey.com/industries/high-tech/our-insights/internet-matters>

a. Incorporate **information and communications technology (ICT) training programs and entrepreneurship classes** that foster youth career development into primary through secondary education, or create global centers that teach these skills if existing educational infrastructure is inadequate.

i. For effective implementation, **teachers** should also be reskilled in how to teach students these skills.

ii. Foster development of creativity, critical thinking, leadership, and entrepreneurial skills by incentivizing students to participate in extracurricular activities.

1. A potential incentive is to have all universities adopt holistic admissions processes that prioritize or strongly consider extracurricular accomplishments in addition to test scores and grades, evaluating students based on qualitative rather than (inaccurate) quantitative data.

b. Increase availability of **multiple-major, interdisciplinary degree programs** at colleges and universities, and encourage students to complete these programs.

c. Support practical **reskilling of workers at any career level.**

i. Create or partially convert existing colleges/universities into lifelong training centers to reskill people throughout their careers at affordable/no costs.

ii. Encourage businesses to first re-skill employees before/rather than hiring new ones or eliminating their jobs.

iii. We note that future generations of workers may require less reskilling as they are naturally more adept at working alongside technology.

d. Incentivize women and children in LDCs to pursue work in **science, technology, engineering, and mathematics (STEM)** programs through **scholarships** provided by governments and NGOs, while still acknowledging and encouraging the arts.

e. Governments should establish **conditional cash transfer programs** and/or microloans to finance education in developing countries; a potential model could be Bolsa Familia in Brazil.

INTERNATIONAL TRADE

International trade has fostered the growth of the global economy since the start of globalization. As international trade accounted for 58% or over \$46 trillion of the global GDP in 2017,²⁶ trade between nations continues to accumulate importance in the global economy. Despite the numerous benefits of international trade and its importance within the global economy, there are still many issues regarding the topic. This section provides detailed policy recommendations to create a better international trade system.

1 Include least developed countries (LDCs) in international trade.

By 2030 it is expected that 33% of people will live in LDCs, yet LDCs are only increasing in debt and plateauing in terms of economic growth.²⁷ LDCs are already at a disadvantage when it comes to international trade because of their comparatively weak economies and high socioeconomic barriers. The exclusion of LDCs in multilateral international trade agreements and the imposition of tariff and non-tariff measures (NTMs) on LDCs results in their economic interdependence, the cultivation of poverty, the stunting of LDC economic growth, and the constraint of the global economy. Despite this, LDC economies have incredible upside potential and can consequently be capitalized upon if the right steps are taken. Ergo, the inclusion of LDCs will not only further the UN SDGs by fighting poverty and stimulating global economic growth, but also be a profitable long-term investment for the G20 countries.

a. G20 countries, specifically the United States, European Union, and China, should **formulate trade agreements that increase LDC exports and market access**. G20 countries can do this by including LDCs in preexisting and new multilateral trade agreements such as the North America Free Trade Agreement (NAFTA) or EU-Japan Economic Partnership Agreement (JEEPA). Doing so would increase competition and employment within LDCs as their markets diversify and exports increase, which addresses concerns of wage inequality and distribution within LDCs.

²⁶ "Trade (% of GDP)" Data. Accessed May 28, 2019. <https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS>.

²⁷ "Facts and Figures - UN-OHRLLS" UN. Accessed May 27, 2019. <http://unohrlls.org/about-lDCs/facts-and-figures-2/>.

b. Eliminate tariffs on LDCs. Tariffs imposed by G20 countries restrict industries of great significance for LDCs. Consequently, tariff-free market access would increase LDC total exports by almost 5 percent or 10 billion USD.²⁸

c. Minimize LDCs' costs of complying with NTMs. G20 countries should **review existing NTMs**, such as eligibility rules, product coverage and exemptions, rules of origin, and administrative costs, that create competitive disadvantages for LDCs. After reviewing, G20 countries should **provide technical assistance to LDCs** to alleviate the pressure LDCs face as a result of NTMs. LDC exports to G20 countries would increase by 10 percent or 23 billion USD "if LDC exporters were able to comply with NTMs as well as non-LDC exporters."²⁹

2 Facilitate international trade between G20 countries and developed countries.

Tariffs have remained the predominant mechanism for the protection of domestic industry since 2008.³⁰ However, tariffs are inefficient measures, resulting in consumption loss by increasing the price of a tariffed good and in production loss by encouraging inefficient domestic producers.³¹ Increased prices transfer wealth from consumers to government and domestic producers, widening the inequality. Although we advocate for the complete elimination of trade barriers, we acknowledge that G20 countries may have interests in the protection of their domestic industries or national security.

a. G20 countries should **eliminate trade barriers** (tariffs, quotas, and non-tariff measures) in areas that are not essential for national security, and **consider renegotiation** when there is a concern regarding national security.

b. If a trade barrier is necessary for national security, member states should **provide subsidies** to domestic industries rather than impose tariffs to avoid consumption losses.³²

28 Nicita, Alessandro, and Julia Seiermann. G20 Policies and Export Performance of Least Developed Countries. Report. 2016. Accessed May 27, 2019. https://unctad.org/en/PublicationsLibrary/itcdtab77_en.pdf.

29 Ibid.

30 Key Statistics and Trends in Trade Policy. Report. 2019. Accessed May 26, 2019. https://unctad.org/en/PublicationsLibrary/ditctab2019d1_en.pdf.

31 Drahozal, Christopher R. On Tariffs v. Subsidies in Interstate Trade: A Legal and Economic Analysis. Report. 1996. Accessed May 28, 2019. https://openscholarship.wustl.edu/cgi/viewcontent.cgi?article=1631&context=law_lawreview.

32 Ibid.

3 Increase technology integration into international trade.

Technological advancements typically accumulate in developed countries and urban areas, causing immense international and domestic migration. To empower all citizens to engage with the changing, digitizing global economy, governments should focus on bridging the digital divide.

a. Governments should **promote electronic commerce** (e-commerce) through business incentives.

i. Governments should **invest in furthering internet access penetration**, especially in rural communities. Such investments will increase the use of e-commerce.

ii. Governments should **maximize consumer access to mobile financial resources** by establishing infrastructures and popularizing with the public to allow them to benefit from global trade. Mobile money accounts are a catalyst for economic inclusion, especially in LDCs.

b. We advocate **standardization of blockchain terminology, development, and security**. This eases collaboration, permits better responses to disruptions, and optimizes security within supply chains.³³

c. Governments should **invest in cybersecurity** to protect digital markets.³⁴ The continued increase of intangible products and e-commerce will be dependent on integrity-maintaining digital systems.³⁵

Above all, technologies such as blockchain need to be trusted by all users to be efficient in their capabilities, such as their ability to streamline issuance of Letters of Credit, which serve as an integral part of global shipping. To permit this, technological capabilities must be increased for the projected volume of transactions and costs must be lowered. Obstacles that prevent access for ordinary companies and individuals to the machine-to-machine economy must also be eliminated in an age of intangible products.

These technologies also pose difficult governance challenges, both domestically and across borders, from the absence of an existing governance framework, to incompatible licensing and taxation requirements or outdated trade agreements. Additionally, in the absence of global standardization, governing bodies should take initiative to harmonize the regional rules on issues such as data flows, licensing, and taxation.³⁶

³³ Lehmacher, Wolfgang, and Transport Industries. "Why Blockchain Should Be Global Trade's next Port of Call." World Economic Forum. Accessed May 30, 2019. <https://www.weforum.org/agenda/2017/05/blockchain-ports-global-trades/>.

³⁴ Ibid.

³⁵ Kariyawasam, Rohan. International Economic Law and the Digital Divide: A New Silk Road? Cheltenham: Edward Elgar, 2008.

³⁶ Itu. "How 5 Technologies Are Changing Global Trade." ITU News. June 11, 2018. Accessed May 30, 2019. <https://news.itu.int/5-technologies-changing-global-trade/>.

BUSINESS & THE ENVIRONMENT

In a world that prioritizes industrialization and the concomitant profits, our environment is often neglected. If we do not prioritize environmental conservation and sustainability, it is futile to consider policies for the future of work or the long-term consequences of international trade, as these depend on the existence of a world in which to work. We face multiple threats that include, but are not limited to: rising sea levels, extreme temperatures, and lack of food security and freshwater.³⁷ The biggest challenge we now face is **how to incentivize the private sector and governments to acknowledge and act upon climate change.**

If we do not take appropriate action by 2030 up to 700 million people will be displaced by freshwater scarcity.³⁸ Radiative forcing creates rising temperatures in the Earth's core, which results in the accumulating amounts of GHGs (greenhouse gases). The three main causes are **electricity and heat production** (25%), **agriculture, forestry, other land use** (24%), and **industry** (21%).³⁹ Thus, our atmosphere and oceans are heating up and water pH levels are rising and declining inconsistently, culminating in several negative outcomes such as geopolitical instability (e.g. Middle East) and crop failures which drive up food prices, riots, mass migration, and food and water shortages⁴⁰. Not only do greenhouse gas emissions exacerbate the effects of climate change, human pollution affects access to water. The current solution that has been extensively adopted is to import water filled in plastic water bottles.⁴¹ However, these bottles end up in open landfills that eventually wash into the ocean.⁴² In 2015, a study concluded that eight million metric tons of plastic end up in the ocean.⁴³ Consequently, **over 100,000 marine mammals and one million sea birds will die** from ingesting microplastics or becoming entangled in plastic debris.⁴⁴ This will have catastrophic effects on global ecosystems. Therefore, we must implement significant changes now to accommodate for our previous inaction.

37 HBS, Climate Change in 2018: Implications for Business, Retrieved May 25, 2019

38 SUMAS, Sustainability Statistics Worth Knowing in 2019, Retrieved May 25, 2019

39 EPA, Global Greenhouse Gas Emissions Data, Retrieved May 25, 2019

40 GSB, Business Will Drive Progress on Climate Change, Retrieved May 29, 2019

41 Graduate School of Stanford Business, Raising a Glass to More Clean Water, Less Plastic Waste, Retrieved May 27th, 2019

42 Graduate School of Stanford Business, Raising a Glass to More Clean Water, Less Plastic Waste, Retrieved May 27th, 2019

43 Science, Plastic Waste Inputs From Land into the Ocean, Retrieved May 27, 2019

44 Graduate School of Stanford Business, Raising a Glass to More Clean Water, Less Plastic Waste, Retrieved May 27th, 2019

1 Create an international database for carbon transactions.

- a.** Create a transparent, accessible platform for sharing data on countries' and companies' carbon emissions and transactions,⁴⁵ and implement through governments and NGOs.
- b.** Create monetary government incentives (e.g. lowering taxes or giving tax credits) for companies to adopt this.
- c.** Increase the ubiquity of recycling through private-public partnerships (PPPs) and fund recycling campaigns in schools and public spaces within communities.
- d.** Promote programs between countries, governments, and companies to be economically and environmentally sustainable.

2 Encourage the use of carbon capture and energy storage.

- a.** Fund this technology, and continue development until this technology is more feasible.
- b.** Use tax credits as an incentive for companies that utilize CCS (carbon capture storage) technology.
- c.** Encourage investment and development of CCS to reduce cost and increase the scale of this solution.
- d.** Encourage sustainable energy storage solutions (i.e. Tesla Battery in South Australia).

3 Commit to reducing marine debris.

- a.** Create a more efficient and effective recycling system and ensure landfill rubbish is disposed of appropriately.
- b.** Increase accountability of companies in regard to illegal dumping, oil spills, and non-environmentally friendly activity.

⁴⁵ Blockchain and the Clean, Smart Grid, MIT Sloan Management Review, Retrieved May 23, 2019

c. Support and promote beach cleaning companies that will transform the trash being produced into a “micro-economy,” adding financial benefits to the community.

i. This triple win programme could create future jobs that involve trash collecting benefiting the environment, the people, and the economy.

d. Collaborate with the private sector to create products with a longer lifespan and usability cycle, which are more easily recycled when they reach the end of their lifespan. Encourage this through subsidies and other monetary incentives.

e. Investment into reducing marine debris, e.g. researching biodegradable plastic, alternatives, waste disposal systems, cleanup of great pacific garbage patch.

f. Fund research into cleanup of oil spills and prevention of these spills.

4

Enforce an international climate change-based curriculum.

a. From primary school, students should be provided with basic education regarding climate change and its biggest rising issues.

i. This should be incorporated as an additional class in schools.

b. The curriculum should be international so that all students have the same knowledge about the critical global situation.

i. This standard can be set by UNESCO⁴⁶.

c. PET bottles and single-use plastics should be banned in schools.

i. Schools could also promote campaigns that advertise the use of reusable bottles and plastics overall.

d. Promote local workshops and forums to discuss climate change, the impact it has on our planet, and potential solutions, hosted by schools in their own regions and gathering NGOs focused on the subject.

i. Primarily meant for awareness

⁴⁶ UNESCO, Climate Change Education, Retrieved May 29, 2019

5

Clean up existing pollution.

- a. Fund clean-up and reduce the production of new plastics.
- b. Fund research (e.g. universities, labs, etc.) on efficient waste reduction and disposal (i.e. pyrolytic acidification, plastic consuming bacteria). Further funding is needed for implementing the proposed system of waste reduction and disposal.
- c. Establish or research secure storage sites that aren't impacted by natural events, or research a new solution to this such as disposal of waste.
- d. Increase funding for disposal of nuclear waste, long term storage, and prevention of future incidents.
- e. Expand mass transportation from cities to suburban areas to reduce personal carbon emissions, including reducing bus ticket prices and adding bus stops.

6

Create a circular economy.

- a. Encourage the application of a circular economy model through the use of PPPs for the establishment of cradle-to-cradle life cycle for products.⁴⁷
 - i. Proposed model analysis:
 - 1. Product design companies within the private sector form partnerships with recycling companies and firms for the exchange of materials that can be repurposed. Those partnerships are non-exclusive regionally based contracts.
 - ii. Governments would incentivize the implementation of those partnerships through the reduction of taxes for the participating companies.
 - iii. Governments would also motivate start-ups in that field, not only through tax reductions, but also through proper funding allocated toward the establishment of environmentally sustainable infrastructure.

⁴⁷ "Circular Design Thinking." Design for Longevity, Retrieved May 28, 2019

7

Raise consumer awareness.

- a.** National and regional partnerships with mainstream social media
- b.** Set up digital campaigns that highlight the importance of environmental sustainability and the epidemic of climate change.
 - i. Each campaign has a specific focus and accommodates a target problem/goal, such as single-use PET bottles.
- c.** Governments encourage Corporate Social Responsibility (CSR) to be joined with Corporate Political Responsibility (CPR).
 - i. In the past, CSR has been implemented by businesses in response to environmental social movements. However, these initiatives fall short when businesses are not held accountable for continuing to support non-sustainable policy (both politically and non-politically).
 - ii. Businesses must more honestly involve themselves in governmental policy-making that is sustainable, or practice CPR.
 - iii. NGOs and governments must hold businesses accountable for transparency with initiatives such as certifications and regulations.

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Stanford Graduate School of Business, August 25, 2015.

<https://www.gsb.stanford.edu/experience/news-history/aulani-wilhelm-ms-14-raising-glass-more-clean-water-less-plastic-waste>.

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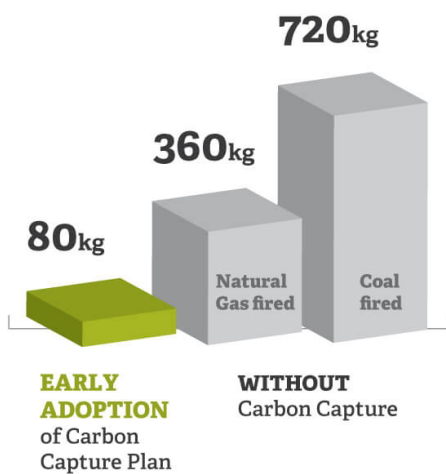
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APPENDIX

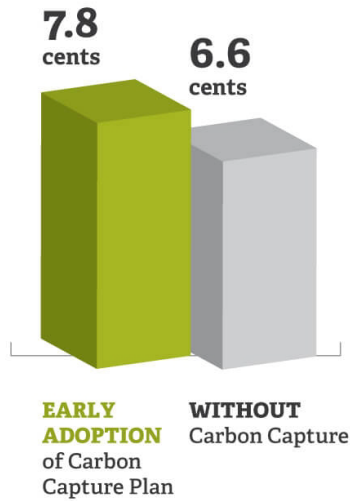
EMISSIONS

Power Plant CO₂ Emissions per Megawatt Hour of Electricity Produced



COST

Cost of Producing 1 kilowatt Hour of Electricity



PROJECTIONS

Projected cumulative CO₂ emissions of new deployments, 2017-2027

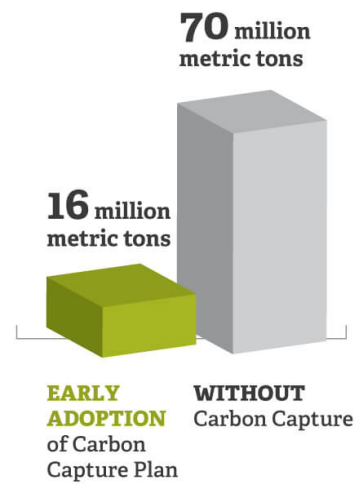


Figure 1.1: The Emissions, Cost, and Projections on the Carbon Capture Storage.

Source: Mooney, Loren, *What Would It Really Cost to Reduce Carbon Emissions?*, October 17th 2014, Bar Graph, Stanford Business.

Global Greenhouse Gas Emissions by Gas

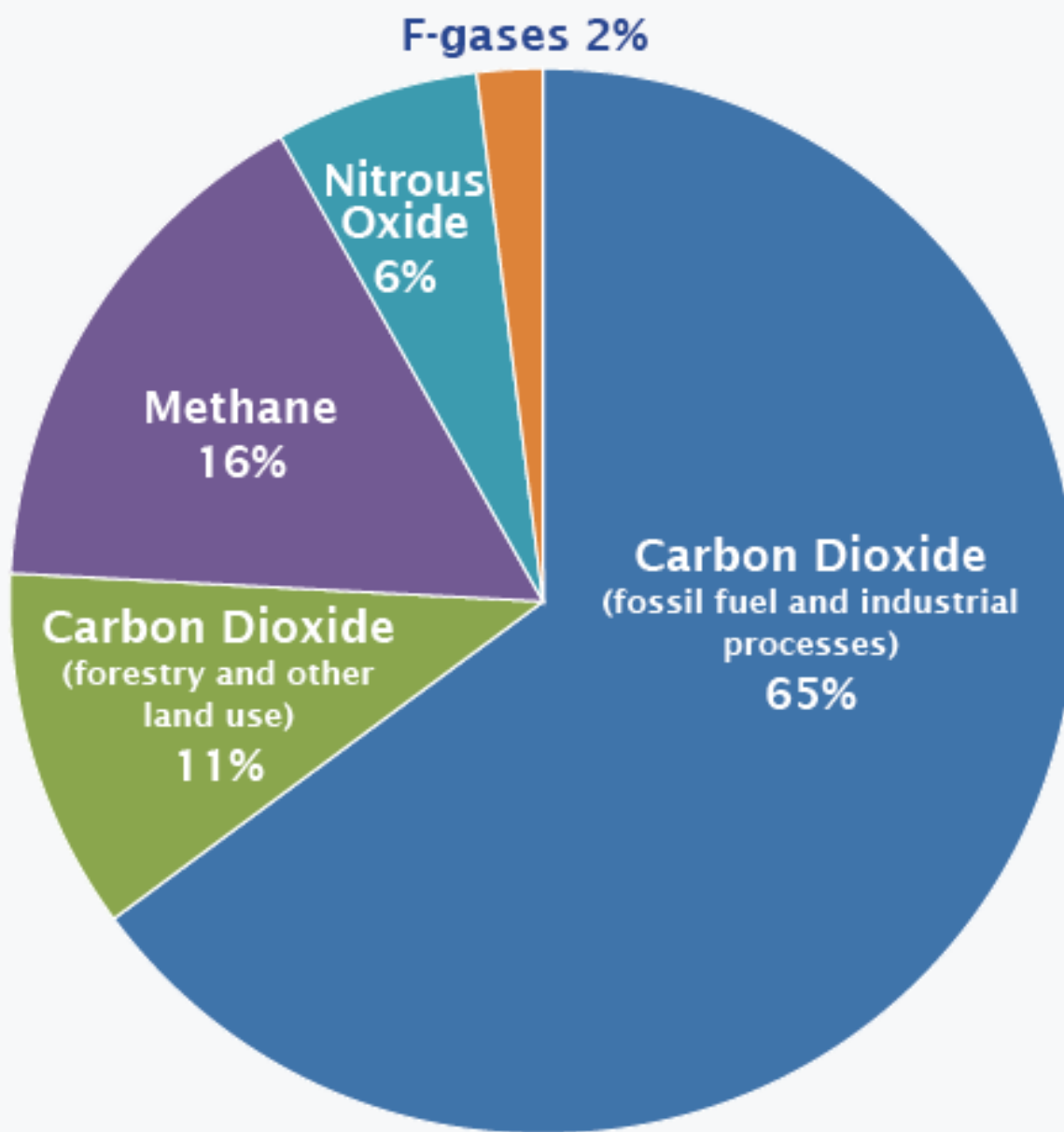


Figure 1.2: Global Greenhouse Gas Emissions by Economic Sector

Source: IPCC, 2014: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Where is global warming going?

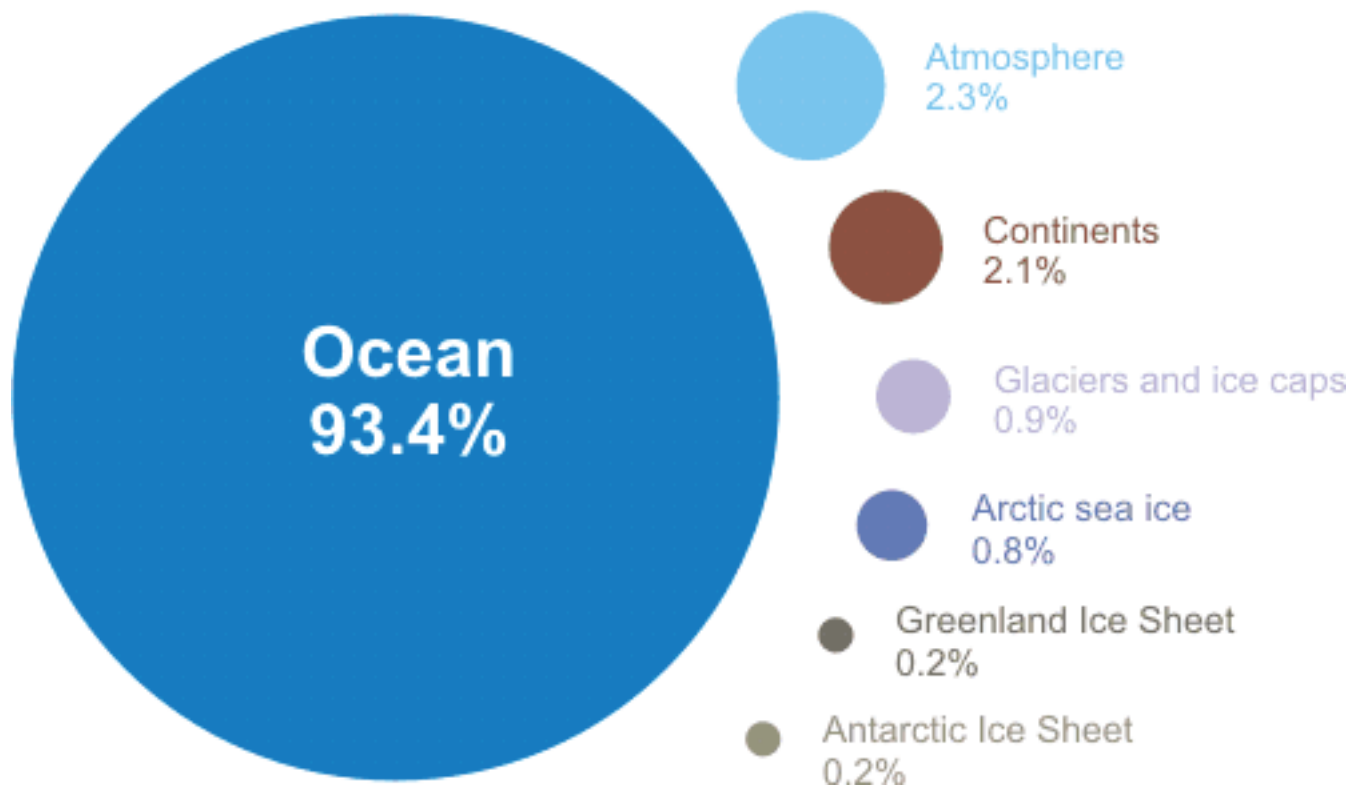


Figure 1.3: Components of global warming for the period 1993 to 2003

Source: IPCC, 2007: *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, Pachauri, R.K and Reisinger, A (eds.)].