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Climate Change: The Biggest Global Issue of the 21st Century
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Summary: The article discusses the importance of climate action and environment conservation to ensure the sustainability of mankind and the environment. It begins by illustrating the characteristics of sustainable cities and how to work towards it. From different standpoints, it addresses the causes and dire consequences of climate change. The article emphasises the importance of individuals, government and organisations in playing their part in protecting the environment. It presents potential environmentally-friendly solutions, derived from research and reliable sources. Furthermore, it urges mankind to exercise responsible consumption and production and initiate efforts to combat climate change for the sustainability of future generations.

What comes to mind when you hear the word sustainable city? Imagine opening your eyes to see the blue sky, the air so fresh that when you take a deep breath, you caught a whiff of a sweet, earthy scent. As you turn around to find yourself enveloped by lush greenery, buzzing flora and fauna. A sustainable city is a place designed to be environmentally friendly, with reduced emissions. A place free from pollution.

Coming second in the list of sustainable cities on the globe is, our clean and green garden country, Singapore. The step taken by our country in protecting the environment is a role model for countries as it shows the readiness of people in playing their role in saving Mother Earth. While succeeding in being one of the the greenest eco-city, it has high economic success. As countries tend to blame their pollution and emissions on factories that boost their economies, Singapore has shown that it is possible to have a thriving economy while playing its part for the environment. Being fortunate to live in one of the most sustainable city, it made us realise that it is even more important to play our part in conserving the environment.



Fig 1. SINGAPORE is ranked the second most sustainable city in the world. The Sustainable BluePrint reduces emissions and promote climate actions.

Image by Katrin Tochtermann, from

<http://travelerslittletreasures.com/singapore-stopover-not-miss-singapore/>

Currently, we must not overlook the dire consequences climate change impacts mankind. Studies showed that global temperature has been increasing by 0.7 degree celsius every century. Based on NASA's predictions, Earth will face unpredictable temperatures and extreme weathers this century. Through the destruction of habitats, climate change is anticipated to displace 250 million people by 2050.

You may be wondering how this is happening as an average person produces a tiny fraction of carbon emissions. The rapid development of society has led to industrialisation, producing significant amount of carbon dioxide. These greenhouse gases trap heat on Earth's surface, causing ice caps to melt and rise in sea levels, submerging several low-lying islands. To put the severity of climate change into perspective, the Solomon Island has lost more than 20% of its surface area in 2014 due to rising seas and erosion.

The reality is the detrimental effects of humankind's folly are prevalent in nature and everyone bear the brunt of climate change. There is an obligation for us to conserve the environment for the protection of humankind in the future. Individuals have to play their part in reducing climate change as empowered individuals have the potential to bring environmental issues to the fore and bring change to the environment.

With the rapid development of globalisation, factory activity output in Singapore has expanded 2.2% since 2016, based on Economic Development Board. Industries are growing at an exponential rate to feed the developing industries of these rising economic giants. This is a pressing and worrying issue as more factories and industries burn more fossil fuels to generate electricity, releasing more carbon dioxide into the air, resulting in greater climate change. Several factories do not value responsible production and dump industrial wastes, as seen from water and air pollution, destroying the environment.

According to the UN Food and Agriculture Organization, animal agriculture contributes up to 20% of greenhouse gases emission, caused by deforestation for the expansion of land to grow life stocks and crops. Alarmingly, ruminant animals like cattle release 70-120 kg of methane per year, which has 23 times worse effect on the environment by carbon dioxide.

In tandem with Singapore's growing population, the solid waste generated in 2015 escalated to 7.67 million tonnes from 7.51 million tonnes in 2014. Among this, food waste accounts for about 10 percent of the total waste generated. The irresponsible waste generated produces greenhouse gases and leads to global warming. Hence, it is essential to create public awareness on the importance of responsible consumption and production.



Fig 2. Waste generated in Singapore rose to 159,000 tonnes in 2016. Zero Waste Singapore promotes responsible production and consumption.

Image by Workforce Development Agency (WDA), from <http://www.eco-business.com/news/singapore-to-upgrade-skills-in-waste-and-recycling-sectors/>

Fortunately, climate actions have been taken for environmental conservation. In 2015, 159 countries including Singapore, joined the Paris Agreement to deal with greenhouse gases emissions mitigation and financial management on protecting the environment starting in the year 2020. The agreement aims to keep global warming below 2 degree celsius above pre-

industrial levels and reduce each country's emissions. At home, Singapore pledged to reduce its emission intensity by 36% from 2005 levels by 2030. It is comforting to know that we are initiating climate action towards reducing our carbon footprints, as part of the efforts to tackle climate change.

Last year, Singapore launched 'The Climate Action Plan' to achieve a better carbon mitigation plan. In 2017, the government set up the Carbon Emissions-based Vehicle Scheme, which are stricter regulations for cars to qualify for green incentives. Above the traditional scheme, this revised plan considers the carbon dioxide levels of vehicle emissions, tackling carbon dioxide emission more effectively, as carbon dioxide contributes 81% of the greenhouse gas emissions, according to Environmental Protection Agency. NEA study states that vehicles produce 30% of global warming emissions so reducing the carbon dioxide levels produced by automobiles will significantly reduce climate change.



Fig 3. Based on NEA study, vehicle produce 30% of global warming emissions. Measures taken to reduce carbon emissions and climate change.

Image by The Straits Times, from <http://www.straitstimes.com/singapore/coes-finish-mostly-higher-in-the-second-round-of-bidding-in-july-2017>

Possible solutions of climate change include reducing the use of fossil fuel for the production of electricity, by using renewable energy alternatives, such as hydroelectricity, solar and biomass. Renewable energy is derived from natural phenomenons so they are replenished constantly, and reduce environmental pollution, improving public health. It is expected for renewable energy sources to supply humanity energy for another 1 billion years.

Moreover, governments can provide incentives for citizens who use environmentally-friendly vehicles, which have less harmful environmental impacts than conventional internal combustion engine vehicles. Also, public transport systems such as SMRT can promote the public to use public transport, reducing congestion in the roads and emissions produced from private cars.

As the proverb goes, “We do not inherit the Earth from our ancestors, we borrow it from our children.” With technology progressing faster than ever, the greenhouse gas emissions from human activities are driving climate change. We must take the bull by its horns and address the most pressing concerns with mutual cooperation and convergence of responsibility and sustainability to create a better future.

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