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A Study About Climate Change In Singapore And How Singapore Tackles It

1. Introduction

In a novel written by Daniel Quinn called “The Story of B” in 1996, he used a metaphor of the boiling frog. If a frog were placed in a pot of boiling water, it would jump out. But if a frog were placed in a pot of cold water which was gradually heated, it would not notice the change and would die. This metaphor is often used to caution people to be aware of gradual changes lest they suffer undesirable consequences (Wikimedia Foundation, Inc., 2021).

In the last 40 years, Singapore’s annual mean temperature increased from 26.9 degree Celsius to 28.0 degree Celsius. But due to Singapore’s high humidity, a 1 degree increase can feel like 4 degrees. Not only that, but rainstorms are also becoming more violent and flash floods have become more frequent (NCCS, 2021). This paper will highlight how Singapore tackles climate change. It will cover human development and its effect on the environment. By exploring the studies of scientists, it will view the topic from the perspectives of law and economics.

2. Reducing Carbon Emissions

Carbon is one of the most discussed topics when it comes to climate change. Carbon dioxide, or CO2, is a greenhouse gas that traps heat from escaping Earth's atmosphere. Since the industrial revolution in the 1760s, global CO2 emissions have increased exponentially in the past two centuries. Though Singapore only contributes less than 1% in global emissions (worldometer), it is still tackling climate change in its way, from implementing new laws and initiatives to building new infrastructure.

2.1. Implementing New Laws

Singapore has implemented a carbon tax on factories to reduce the amount of CO2 released. During the 2018 budget speech, Minister of Finance, Heng Swee Keat said that the tax rate has been set to $5 per tonne from 2019 to 2023 and is expected to increase to $10 to $15 per tonne by 2030 (Mohan, 2021).

2.2. Implementing New Initiatives

Singapore's transportation is also transitioning to become electric. During the 2021 budget speech, Mr. Heng said that $30 million will be invested over five years to build charging infrastructure for electric vehicles, EVs, across Singapore, and petrol prices would be increased to discourage the use of internal combustion engines, ICE, vehicles

(gov.sg, 2021). Newer models of public buses are also transitioning to become electric. Through the EV Early Adopter Incentive, EEVI, Singaporeans can enjoy a rebate of up to $20,000 when purchasing an EV between 1 January 2021 and 31 December 2023 (Ho, 2021).

2.3. Building New Infrastructure

To minimise the demand for natural gas for electricity, the government has invested in solar panel infrastructure. Due to Singapore's geography, solar panels can become a greener alternative energy source in the future. Solar panels have been built on top of HDB flats, and floating solar farms have been built in reservoirs and on waters around the country. Since 2014, the Land Transport Authority, LTA, has started to replace all old street lights in Singapore with more efficient LED ones. This could cut electricity consumption by 25% (Land Transport Authority, 2017).

3. Consequence Of and Solutions To Climate Change

Our food and water security are also affected by climate change.

3.1. Effect On Food

As temperature rises, droughts and rainfall occur more often. This can affect crop yield as farmland may become inarable. Since Singapore relies on imports from various

countries, food prices would rise significantly due to the lower supply. As such, the government is supporting local farms. In Singapore, there are various types of farms ranging from vertical, rooftop, and community. Some of these farms employ hi-tech features to improve crop yield, while some remain traditional. One of these farms, called Sky Greens, was awarded the Singapore Standard 632 award (Begum, 2019). These local farms can produce cheaper vegetables and increase Singapore's self-sufficiency.

3.2. Effect On Water

One of Singapore's water sources is rainwater or local water catchment. Singapore's weather can be unpredictable; there could be long periods of drought, followed by intense rainfall (NCCS, 2021). And as prices for imported water from Malaysia rises, unpredictable weather patterns can pose a challenge to Singapore's water source. Not only did Singapore develop reusable water, called NEWater, to improve its water security, but it also has effective drainage systems to collect as much rainwater as possible.

4. Conclusion

This paper has examined the reasons for the rise in climate change in Singapore and how they are tackling it. The issue of climate change also affects the whole world. As countries become more developed, their CO2 emissions increase, and as such their responsibility of reducing their emissions also increases. Governments should not only

encourage the adoption of EVs and slowly phase out the use of ICE vehicles, but also invest in renewable energy sources. The effects of climate change should also be better communicated to the public. Media and news outlets should cooperate with public health agencies and deliver scientifically reliable information to the public. Because in the absence of information, the public would not understand the effects of climate change and how they can minimise its effects.

Schools can also educate students on the effects of climate change. This ensures that youths can make a change when they grow up. Additionally, since students are taught at a young age, they can develop habits like purchasing more energy-efficient products, using a fan instead of the air-conditioner, and using LED light bulbs.

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