Committee: Environmental Commission

Issue: Air Pollution in Asia

Student Officer: Athina Papakonstantinou

Position: Deputy President

PERSONAL INTRODUCTION

Dear delegates,

It is with utmost pleasure that I welcome you to this year's CSMUN. My name is Athina Papakonstantinou, I am an IB student, currently attending Costeas-Geitonas School and I will have the honor of serving as you Deputy President in the Environmental Commission.

My MUN career began four years ago and I have attended six conferences since. MUN has given me so much. I have come across loads of interesting people, gained so much knowledge, evolved as a person and, above all, had so much fun. This is why I would like to urge you all to take advantage and make the most out of not only this, but any MUN conference you get to attend.

This study guide is meant to introduce you to the topic of air pollution in Asia and help you throughout the process of creating resolutions and debating. With that being said, I strongly advise that you carry out your own research as well, in order to gain a better perspective and come up with many original and effective solutions to the problem.

I hope to see well prepared delegates and above all a challenging and fruitful debate.

For any questions that may arise, concerning the topic or the conference in general, don't hesitate to contact me on my email: athina.papako@gmail.com.

Best regards,

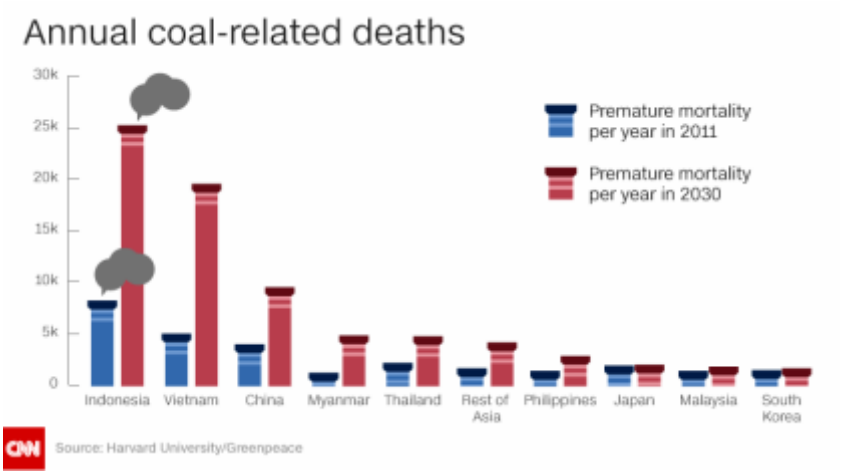
Athina Papakonstantinou

INTRODUCTION

The vast economic and population growth in Asia has resulted in serious environmental problems in the region. With premature deaths occurring by the thousands, life expectancies constantly dropping and health implications due to air pollution on the rise, both the Asian population and the international community are highly troubled by the situation.

Coal emissions from vehicles and plants and low standards for fuel have majorly contributed to the environmental state of the region. Nevertheless, indoor pollution is to blame as well, since the heavy reliance on solid fuel in most Asian regions deteriorates noticeably the air quality. The combination of indoor and outdoor air pollution is a main cause of death for the Asian population, claiming millions of lives annually.

The poor air quality in Asia has a major human cost, that doesn't go by unnoticed: the asthma and lung cancer rates are on the rise, and respiratory diseases, cardiovascular complications and strokes are more than common in these regions. What's more, air pollution in Asia does not only put at risk the health of the citizens, but it endangers the economic well-being of the region as well. The decline in productivity combined with the air pollution-related health care costs can have disastrous consequences on the Asian economy.



KEY TERMS

Air pollution

According to the World Health Organization[1], air pollution can be defined as the "contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere".

PM2.5

PM2.5 are fine air particles whose diameter is smaller than 2.5 micrometers. They are considered dangerous due to their ability to penetrate deep into the cardiopulmonary system. High exposure to the particle has been linked to respiratory and cardiovascular diseases. According to the World Health Organization, PM2.5 concentration is considered unhealthy when it exceeds 25 micrograms per cubic meter.

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[1] "Air Pollution." World Health Organization. World Health Organization, n.d. Web. 28 July 2017. <http://www.who.int/topics/air_pollution/en/>.

Air Pollution Index-API

The Air Pollution Index-API, also known as Air Quality Index-AQI, is an index that reports the daily air quality, on a scale of 0 to 500. Any API value below 100 is considered healthy.

Environmental Protection Agency (EPA)

The Environmental Protection Agency is an organization founded in 1970 with the mission of protecting human and environmental health[2]. Among a variety of other responsibilities, it conducts researches, monitors and proposes actions against air pollution.

Carbon Pricing

Carbon pricing is a measure that aims for the reduction of harmful emissions, implemented in many countries and businesses, in which "the burden for the damage is shifted back to those who are responsible for it, and who can reduce it"[3]. In other words, the damage done by carbon emissions is assessed and the source of these emissions is then responsible for the repair of these damages -damage to crops, health care costs etc-. Consequently, this measure is used as a motive for countries and businesses to reduce their carbon emissions.

TOPIC DISCUSSION

A combination of the high population, the climate and the amount of industrial activity that takes place in many Asian countries is what makes Asia the continent with the most intense environmental problem. Countries such as China, India, Saudi Arabia, the U.A.E, Qatar, Iran and many more, have been drowned in a heavy smog for years. With the health of the citizens severely damaged and with the situation getting worse from day to day, countries have decided to take action. Dealing with the problem of air pollution, however, is anything but simple.

Apart from the health consequences mentioned above, air pollution highly damages the environment as well. Causing acid rains and ozone depletion with the huge amount of chemicals being released in the atmosphere daily, changing the global climate and putting at risk wildlife, air pollution undoubtedly poses a threat to the sustainability of the planet.

Something that highly worries countries internationally as well, is the vast number of economic effects air pollution has globally, since air pollution has been continuously linked to a reduction in productivity. Research[4] done in China, and more specifically Shanghai, showed that on average a 10% increase in the API was connected to a 0.35% decrease in worker performance. It was then estimated that on days when air pollution is lower, the productivity of the workers tends to increase by around 6%. The same research reached the conclusion that a

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[2] Staff, Investopedia. "Environmental Protection Agency (EPA)." Investopedia. N.p., 11 May 2017. Web. 28 July 2017. <http://www.investopedia.com/terms/e/environmental-protection-agency.asp>.

[3] The World Bank, "Pricing Carbon".

[4] The Economist, "How air pollution affects office workers-and the economy".

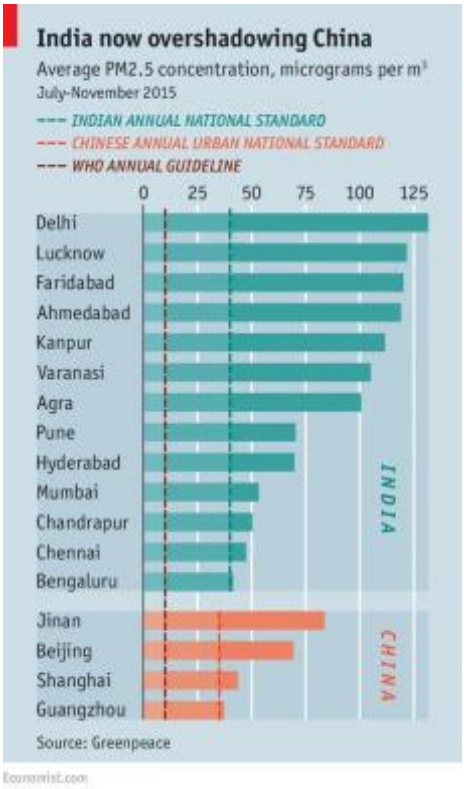
reduction in Chinas air pollution by only 10 points in the API could result to an increase in production by at least $2.2 billion annually.

This is only an example of how much the economy is affected by air pollution. Health care costs also seem to rise and agricultural production appears to decrease substantially as air pollution increases. The combination of all these economic consequences is expected to lead to a gradual increase of the global costs to 1% of the global GDP.

These potential economic consequences of air pollution are very concerning and further point out the need for strong policy action. The effects air pollution has, not only to the well-being of the population, but to the economy and the natural habitat as well, make it a problem that needs to be faced immediately.

MAIN COUNTRIES INVOLVED

India



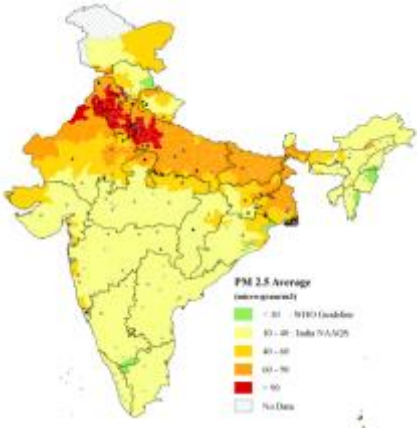
With the situation in China stabilizing, India is now the country with the most polluted air, with 1.1 million deaths annually[5] due to air pollution. Its PM2.5 concentration is 20 times higher than the WHO's guideline for safe air, exceeding 500 micrograms per cubic meter.

The country owes a considerable amount of its air pollution to low standards for vehicle emissions and fuel, including diesel exhaust, which puts at great risk the well-being of the Indian population.

The problem has deteriorated over the past years, since successive Indian governments, in order to maintain voters, have promoted the use of diesel by instructing state-owned fuel companies to sell diesel cheaper than gasoline. In 2013 more than half the cars sold in India were diesel-powered. Nevertheless, the Indian government began making slight improvements during the most recent years. In December 2014, the Indian Supreme Court banned the registration of luxury diesel cars, while the national government set stricter emission standards for most vehicles and made efforts to improve the quality of fuel.

[5] New York Times, "India's Air Pollution Rivals China's as World's Deadliest" .

In January 2015, in an effort to reduce traffic and vehicle emissions, the authorities in Delhi restricted road use on alternate days to odd or even-numbered license plates. Against all expectations, this system proved to be successful. With a great amount of volunteers helping to impose this new scheme, along with the police, the vast majority of citizens seemed to approve of the new system. And although public transport was more crowded, the traffic was significantly reduced.



However, this method failed to reduce emissions drastically, and was thus put to an end. Nonetheless, it proved to be of great significance, since it urged the Indian government to take further measures to battle air pollution, including the expansion of Delhi's metro, the better maintenance of roads, the restriction on large trucks entering the city and the replacement or retrofitting of older vehicles.

Other factors that are significantly contributing to India's air pollution problem are indoor pollution and agricultural burn-off. The use of solid fuels in most households, especially during cooking and the majority of the building materials used are two of the main sources of indoor pollution. This type of pollution has been proven to be more harmful than outdoor pollution, affecting mainly women and children –as they generally spend more time at home- and causing major health implications, including respiratory and cardiovascular diseases, cataract and various types of cancer.

As for agricultural burn-off, it is common for farmers to burn the stubble left after rice harvesting, with it being the most affordable option. Various activists have made suggestions such as the provision of modern harvesting machinery by the state to the farmers, in order to avoid the burning of the stubble in the fields, but the continuous increase of rice production and the inactivity on the government's part make it obvious that the situation will not be ameliorated any time soon.

China

China had been facing severe environmental problems for decades. In 2014, however, the Chinese government, alarmed by the situation began taking substantial measures in order to reduce air pollution. It shut down factories, restricted automobiles and set stricter emission standards on power plants, while simultaneously working to limit its reliance on oil. The PM2.5 concentration became more strictly monitored in most cities and in November of 2015 the government implemented a 5-year plan, with the target of reducing PM2.5 concentration by 18%, by 2020.

The progress was noticeable. With more cities being monitored, increased transparency and greater data accuracy,

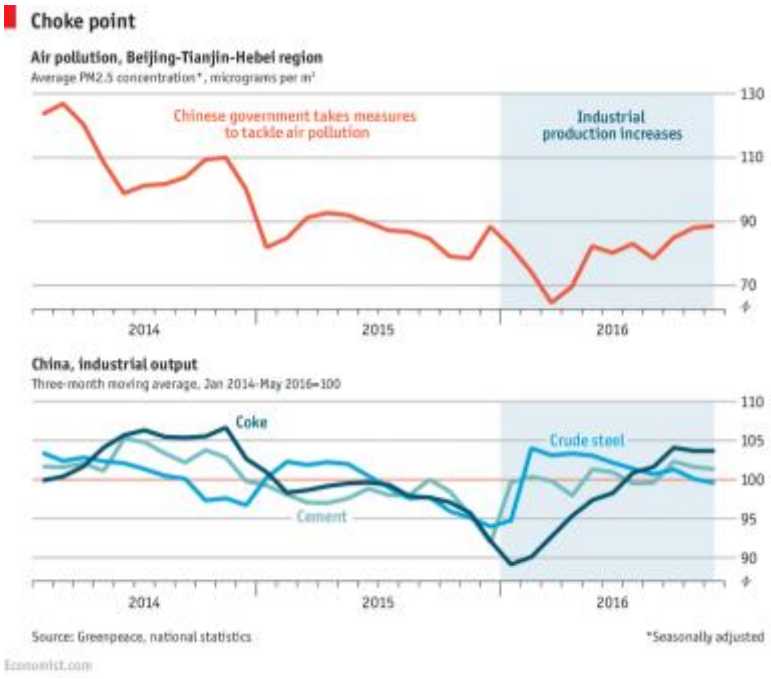
PM2.5 particles seemed to be clearly reduced. The smog surrounding the cities did not disappear, but it became lighter.

China, however, has always relied heavily on manufacturing. The state, disregarding all of the progress that had been made, seemed unwilling to shut down a majority of its industries. Around the spring of 2016, a rebound in heavy industry was noticed, with China producing increasing amounts of crude steel, pig iron and cement. All improvements in air quality since 2014 began evaporating as industrial production was increased.

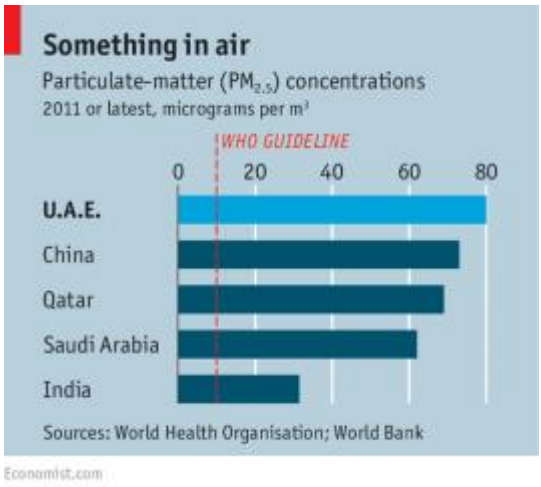
Along with the increase of industrial production there has been an increase in coal and automobile use. The central government, although eager to improve the situation, does not have the power to enforce itself on the local authorities.

In the steel-making province of Hebei, air pollution is the most severe, affecting all of its surrounding cities, including Beijing. The PM2.5 concentration increased at an alarming rate between January and March of 2017, by more than 27%. At the same time industrial production was growing by 7.6%.

With the government highly concerned with the situation and with Beijing closing the last of its coal-fired power station, there is the possibility of an industrial decline in the following moths. The public, however, along with officials, are worried about the unemployment that would follow this industrial downturn. Any progress in the limitation of air pollution from now onwards is predicted to happen at a slow rate and there is little chance of China reaching its targeted PM2.5 reduction by 2020.



Saudi Arabia



Saudi Arabian cities rank high among the WHO's list[6] of cities with the most polluted air. The country's reliance on the oil industry along with the high standards of living are the main causes behind its air pollution problem, and contribute greatly to the creation of the smog that suffocates the citizens daily. The air pollution causes severe health problems, including cancer and asthma, and kills thousands each year.

One of the major problems related to air pollution is that, in Saudi Arabia, there is one primary means of transportation, cars. The warm environment and long distances make public transportation impractical and uncomfortable and thus, throughout the years, Saudi Arabians have always favored cars over public transport. Additionally, the fact that most Saudi Arabian families have large vehicles, that generally consume more oil, and that gasoline prices are extremely low, only worsens the situation.

There is also the belief that, in Saudi Arabia, public transportation is safe only for men and besides that, women are legally not allowed to be in public transportation without being escorted by a man. All of that only adds to the fact that most of the population will opt for car use over public transport.

The need for policy changes is urgent. Such changes could include making the roads safer for women and having stricter penalties for irresponsible car use.

As mentioned above, the huge reliance on the oil industry also contributes greatly to the air pollution problem. The industry is guilty for releasing large amounts of harmful emissions into the atmosphere and making intense use of fossil fuels. There have been some actions aiming to the improvement of air quality, such as the construction of a renewable energy industry and the creation of policies and programs that will promote environmental sustainability. However, there have not been any substantial changes to the way the oil industry operates.

The key to resolving the issue in Saudi Arabia is the further cooperation between the Arab nations and the creation of additional policies towards the protection of the environment.

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[6] Ramsey, Lydia. "The Cities with the World's Worst Air Pollution WHO." Business Insider. Business Insider, 12 May 2016. Web. 28 July 2017. <http://www.businessinsider.com/the-cities-with-the-worlds-worst-air-pollution-who-2016-5/#4-riyadh-saudi-arabia-156-gm3-of-pm-25-12>.

TIMELINE OF EVENTS

The table below sets out a list of the main policies and actions towards the improvement of air quality in Asian countries throughout the most recent years.

Date	Description of Event
2003	A National Energy Efficiency Program (NEEP) was started in Saudi Arabia with support from the UN Department for Economic and Social Affairs (UN-DESA)
2006	China implemented the 11th Five-Year Plan, with the goal of reducing sulfur dioxide emissions by 10%, by 2010
2007	The U.A.E. completed a national strategy with the goal of achieving sustainable and balanced development
2010	The 11th Five-Year Plan in China was successful
2010	Subsidy reforms were implemented in Iran, with the aim of reducing oil consumption
2011	The Chinese 12th Five-Year Plan was implemented, in which previous policies were maintained and extended
2012	Phase two of the National Energy Efficiency Program (NEEP) in Saudi Arabia was started with support from the UNPD, with the goal of developing the new Saudi Energy Efficiency Center and designing the first Energy Conservation Law
2012	The Ambient Air Standard, which introduces new emission limits for companies, was published and made mandatory in Saudi Arabia
2013	The India-California Air Pollution Mitigation Program was initiated
2013	The Chinese State Council issued an Action Plan for the Prevention and Control of Air Pollution
2013	The Saudi Council of Ministers approved the transport master plan, which includes the construction of public transport facilities
2014	The Chinese Environmental Protection Law was amended
2014	Saudi Arabia established corporate average fuel economy standards (CAFE) to reduce domestic oil consumption
2015	The Chinese government implemented the 13th Five-Year Plan, with the target of reducing PM2.5 concentration by 18%
2016	The Chinese Law on the prevention and Control of Atmospheric Pollution was implemented
2017	The 7th Northeast Asia Forum on Air Quality took place in South Korea, with representatives from 13 Northeast Asian cities/provinces

POSSIBLE SOLUTIONS

Before looking into solutions for the air pollution problem in Asia, we should keep in mind that in each area the problem is different. Air pollution is caused by different factors and can have different effects, depending on the city we choose to examine. Nevertheless, there are some general solutions that if applied would certainly help battle the consequences of air pollution.

Primarily, we should focus on raising public awareness. This could happen either through education or informative campaigns, where the public is informed on the issue and the threat it poses to their health and well-being. Also, it's important to spread awareness on both indoor and outdoor pollution, and provide the people with a variety of ways to prevent both types. These ways could include the use of alternative energy resources, recycling, better kitchen management, use of public transportation, etc.

Additionally, countries should invest in the improvement of public transportation. Measures need to be taken in order to ensure that all means of public transportation are safe, comfortable and easily accessible by all citizens.

Attention also needs to be given to the importance of the collection and utilization of data. Relevant data needs to be collected constantly, in order for states to be able to calculate changes and assess health risks. This data will improve our understanding of the problem, help in the examination of illnesses related to air pollution and provide useful information on the progress of Asian states and the evolution of the problem. It would also help countries implement effective policies that are targeted to deal with the given amount of pollution.

Furthermore, keeping in mind the huge reliance on industrial production and automobile use in many Asian countries, the need for some substantial policy changes concerning plant emissions and fuel quality is urgent. Some useful measures could include tightening the controls for power plant emissions, implementing emission or carbon pricing and introducing cleaner fuel standards. Additionally, Asian countries could introduce national coal consumption cap[7], strengthen supervision and shut down inefficient coal fired industrial boilers. Such measures could ensure a long-term reduction of harmful emissions

Finally, some measures for eliminating indoor pollution should also be included. In order for that to happen, the public must be introduced to environmentally sustainable practices such as proper ventilation, cleaner cooking, lighting and heating practices and efficient energy use.

[7] Coal consumption cap: A limit set by a country in the amount of coal they will consume throughout a predetermined time-frame.

UN INVOLVEMENT: PREVIOUS RESOLUTIONS

- World Health Organization, Item 14.6: Health and the environment: addressing the health impact of air pollution <http://apps.who.int/gb/ebwha/pdf_files/WHA68/A68_ACONF2Rev1-en.pdf>

- UNEP, Resolution 1/7: strengthening the role of the United Nations Environment Programme in promoting air quality <https://www.google.gr/url?sa=t&rct=j&q=&esrc=s&source=web&cd=7&cad=rja&uact=8&ved=0ahUKEwiwn-evpK7VAhXJI8AKHdj_Ay0QFghOMAY&url=http%3A%2F%2Fwedocs.unep.org%2Fbitstream%2Fhandle%2F20.500.11822%2F17578%2FK1600802%2520Doc%25206%2520E.docx%3Fsequence%3D5%26isAllowed%3Dy&usg=AFQjCNH0A6lKevfPcDK4ufkYkSEvpWYZrw>

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