Outdoor Air Pollution: Environmental Planning In Australia

Outdoor air pollution: Report

Introduction

In the existence of humans to seek economic development and the abundance of nature. We need to consider the fact that appears today is Limits of resources, ecological balance, cultural background and human needs in the future which is the origin of the term 'conservation”.

Air pollution occurs when the air is contaminated with any chemical, physical or biological agents. It is the world’s largest environmental health risk leading to millions of deaths around the world this year. Although anyone can be affected by air pollution people who are most vulnerable include the elderly, children and people with chronic lung or heart disease.

Outdoor air pollution can be polluted by natural sources or human sources. Natural or biogenic sources of air pollution include pollen, bush fires or dust from deserts. Pollution of the air from human sources also called anthropogenic air pollution is commonly due to industries, burning of fossil fuels, and the use of motor vehicles. It arising from the combustion of various fuels, including carbon monoxide, dust, Sulfur dioxide, nitrogen oxide gas and particulate matter (Ritchie and Roser, 2019). As result of the study indicate that the problems with air causes a high cost to society, especially the health and quality of life issues.

Environmental issues

Outdoor air pollution

According to (Xing et al., 2016), is a complex mixture of small particles and liquid droplets that are mainly from industry, motor vehicle exhaust, dust storms or bush fires can also generate large amounts of PM. The health effects of particulate matter are mostly due to particles that are less than 10 micrometres in diameter these particles can reach the deepest parts of the lungs and enter the bloodstream

Air pollution is a significant environmental problem in many countries around the world, such as big cities in China, Thailand, India which can be observed from the pollution level in very small dust particles of 2.5 microns (aqicn.org, 2019), (Wei, N, 2019), (Berkeley Earth.lbl.gov., 2019).

Also, last year (2018) there was a dust storm swept the southeastern part of Australia. Resulting in the sky to turn orange throughout the city and it has created anxiety about health problems. (BBC News, 2018)

The concentration exceeds the standard value according to the recommendations of World Health Organization (WHO guidelines) and the US Department of the Environment (US EPA) for example, Thailand exceeds the standards that allow pollution levels to twice as high as the World Health Organization standards. The average concentration of PM2.5 dust in 24 hours in the Bangkok area during the year 2011-2019 shows that Bangkok air pollution levels will be

highest during December to March of every year. (Attavanich, W.,2019)

Oanh (2017) conducted a study on the source of PM2.5 dust in Bangkok and found that PM2.5 dust in the Din Daeng area comes from 52% of diesel vehicle exhaust from 35% of biomass burning, secondary dust and others. (Oanh, 2017) While Oanh (2017) studied the source of PM2.5 dust in Asian countries and found that PM2.5 dust comes from diesel vehicle exhaust 20.8-29.2 percent, from biomass burning 24.6-37.8 percent, secondary dust hundred 15.8-20.7% and others. In the dry season there will be Burning biomass is higher than in the rainy season. (Oanh, 2017)

Statistic from smartairfilters.com

The average concentration of PM2.5 dust is 24 hours in the Bangkok area during the year 2011-2019 [2554-2562].

Statistic from Attavanich, W., 2019

OECD shows data about particulate matter pollution, with further classification by population-weighted, from 2000 to 20130. An overall is a significant rise, especially in Africa. (The European Environment Information and Observation Network, 2012)

Statistic from www.eea.europa.eu

Rangel and Vogl (2018) trying to measure the effects of sugarcane burning directly on human health in the state of São Paulo, Brazil. Incineration of sugarcane plantations will increase 10 microns (PM10) dust in the area of 26-34% and ozone (O3) increases by 7-8% in a 50 kilometer radius. Incineration of sugarcane in the last 3 months before birth will cause 1) Newborn babies weighing less than 1.5 kilograms 2) Birth before 32 weeks (less than 8 months) 3) 12 percent smaller babies than usual and 4) increase the mortality rate in the womb (17 people in 1000 person). (Rangel and Vogl, 2018) The above study also reflects the potential impact in many countries like China, India, Thailand, Indonesia as it is favored to burn agricultural waste in major economic crops such as rice, sugar cane, factories and maize which covers more than 85.8 million rai of cultivated land in the crop year 2016/2017. (Attavanich and Pengthamkeerati, 2018). According to Attavanich and Pengthamkeerati (2018), it was found that burning in the off-season and off-season rice fields in Thailand was as high as 57% and 29% of the harvested area respectively. While the sugarcane plantations, factories, and maize burned approximately 47 and 34 percent of the harvested area respectively. (Attavanich and Pengthamkeerati, 2018)

In addition, many studies in foreign countries have tried to assess the cost of economic damage from air pollution. Levinson (2012) estimates the cost of air pollution in the United States between 1984-1996 and found that the willingness to pay to reduce 1 microgram per cubic meter (µg / m3) of PM10 is Equal to 1,037 USD per household per year. Also, Attavanich (2019) tried to assess the cost of economic damage from air pollution in Thailand. It is found that the cost of economic damage from PM10 dust in Bangkok will be as high as 446,023 million baht/year. (Levinson, 2012)

World Health Organization [WHO] found that air pollution causes premature deaths in urban and rural areas of up to 4.2 million people worldwide in 2016, which is considered the most damaging pollution compared to other types of pollution. (WHO, 2018). By 92 percent of all

young deaths are in low and middle-income countries. Also, the Southeast Asian region, including the Western Pacific, has the highest number of deaths. (WHO, 2018)

According to a study by the Institute for Health Metrics and Evaluation, the University of Washington sponsored by the World Bank, found that air pollution is a common factor that causes various diseases because there are many chemical components both irritating substances and pre-cancerous substances causing disease, such as chronic obstructive pulmonary disease (COPD), Stroke, Ischaemic heart disease, Lung cancer and Lower respiratory infection. These causing most deaths in Thailand, about 50,000 people a year and it is the leading cause of death In Australia. (Institute for Health Metrics and Evaluation, 2018), (Institute for Health Metrics and Evaluation, 2017), (Institute for Health Metrics and Evaluation, 2019)

Environmental planning in Australia

At present, the natural resource and the environmental crisis is a major problem in many countries has been faced as a result of the increase in world population and changes in technology, science, the use of natural resources and an imbalance of resources. These problems lead to environmental management for sustainability. Especially in the making of treaties or collaboration and international agreements to apply these measures to prevent and solve environmental and natural resource crises.

Australia Even with a small population, they also experience environmental problems. Australia has a huge problem of forest fires that occur every year continuously and burns heavily, despite careful monitoring. (Abs.gov.au, 2019)

Australia places great importance on natural and environmental conservation plans. Because it is a country that has the main income from agriculture and agro-industry Environmental changes will have the greatest impact on the progress of the country. Australia has set strict measures to prevent catastrophic fires.(NewsComAu, 2019) Because it is a disaster that destroys forest areas and the environment and a large number of population lives each year, such as the last forest fire in February 2009, in the state of New South Wales, Victoria has killed 210 people. So, There are using satellites to detect electricity, Installing a warning light, increasing staff at forest protection prohibits tourists from staying in certain areas and increasing penalties for people who cause forest fires.(NewsComAu, 2019)

However, in Australia, the overall AQI is moderate. In each major city, Brisbane 28, Melbourne 25, Sydney 15-45, Adelaide 13, Hobart 3, Perth 2. (aqicn.org, 2019). For Brisbane, the Brisbane City Council has set up a unit to control air quality for over 20 years. In 2016, BCC won the Clean Air Achievement Award from the Clean Air Society of Australia and New Zealand after BCC has overseen. Managing the air quality of the city according to the well-established management plan since 1996. (Brisbane.qld.gov.au, 2019)

References

1. Ritchie, H. and Roser, M. (2019). Exposure to particulate matter. [online] Our World in Data. Available at: https://ourworldindata.org/air-pollution [Accessed 7 Sep. 2019].
2. Xing, Y., Xu, Y., Shi, M. and Lian, Y. (2016). The impact of PM2.5 on the human

respiratory system. [online] Jtd.amegroups.com. Available at: http://jtd.amegroups.com/article/view/6353/6196 [Accessed 5 Sep. 2019].
3. aqicn.org. (2019). Shanghai Air Pollution: Real-time Air Quality Index. [online] Available at: http://aqicn.org/city/shanghai/ [Accessed 6 Sep. 2019].
4. Wei, N. (2019). How's the air quality in Bangkok? See the data - Smart Air Filters. [online] Smart Air Filters. Available at: https://smartairfilters.com/en/blog/bangkok-air-quality-thailand-2018/ [Accessed 8 Sep. 2019].
5. Berkeley Earth.lbl.gov. (2019). Berkeley Earth. [online] Available at: http://berkeleyearth.lbl.gov/air-quality/local/India/NCT/New_Delhi [Accessed 8 Sep. 2019].
6. BBC News. (2018). Giant dust storm sweeps across Australia. [online] Available at: https://www.bbc.com/news/world-australia-46298309 [Accessed 9 Sep. 2019].
7. Attavanich, W. (2019). 'Social Cost of Air Pollution in Thailand and Solutions.' PIER Discussion Paper (forthcoming).
8. Oanh, K. (2017). “A Study in urban air pollution improvement in Asia.” Asian Institute of Technology
9. The European Environment Information and Observation Network. (2012). Particulate matter pollution. [online] Available at: https://www.eea.europa.eu/data-and-maps/figures/particulate-matter-pollution [Accessed 5 Sep. 2019].
10. Rangel, M. A., & Vogl, T. S. (2018). “Agricultural Fires and Health at Birth.” Review of Economics and Statistics Forthcoming.
11. Attavanich, W. and P. Pengthamkeerati (2018). “Support to the Development and Implementation of the Thai Climate Change Policy: Experts on GHG mitigation options in the Thai Agriculture sector.” Funded by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH under supervision of ONEP & OAE.
12. Levinson, A. (2012). “Valuing public goods using happiness data: The case of air quality.” Journal of Public Economics 96: 869-880.
13. World Health Organization (WHO) (2018). “Ambient (outdoor) air quality and health.”
14. Institute for Health Metrics and Evaluation. (2018). Over 7 billion people face unsafe air: State of Global Air 2018. [online] Available at: http://www.healthdata.org/news-release/over-7-billion-people-face-unsafe-air-state-global-air-2018 [Accessed 9 Sep. 2019].
15. Institute for Health Metrics and Evaluation. (2017). Thailand. [online] Available at: http://www.healthdata.org/thailand [Accessed 5 Sep. 2019].
16. Institute for Health Metrics and Evaluation. (2019). Australia. [online] Available at: http://www.healthdata.org/australia [Accessed 5 Sep. 2019].
17. Data.worldbank.org. (2019). World Development Indicators (WDI) | Data Catalog. [online] Available at: http://data.worldbank.org/data-catalog/world-development-indicators [Accessed 7 Sep. 2019].
18. Abs.gov.au. (2019). Australian Demographic Statistics, Dec 2018. [online] Available at: https://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/3101.0 [Accessed 9 Sep. 2019].
19. NewsComAu. (2019). States bracing for ‘catastrophic’ bushfires. [online] Available at: https://www.news.com.au/technology/environment/warm-windy-weather-in-parts-of-nsw-queensland-bring-dire-fire-conditions/news-story/92aed12e3c35c2d0480206e4c6005058 [Accessed 9 Sep. 2019].
20. aqicn.org. (2019). Brisbane CBD, Australia Air Pollution: Real-time Air Quality Index. [online] Available at: http://aqicn.org/city/australia/queensland/brisbane-cbd/ [Accessed 9 Sep. 2019].
21. Brisbane.qld.gov.au. (2019). Brisbane's air quality | Brisbane City Council. [online]

Available at: https://www.brisbane.qld.gov.au/clean-and-green/natural-environment-and-water/air-quality [Accessed 9 Sep. 2019].