Environmental Pollution and Health Problems Due to Forest Fires with Co2 Parameters

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Abstract

Today, air pollution is a serious problem faced by industrial countries. The impact caused by air pollution is not only a direct impact on human health, but also can damage the environment. One of the sources of air pollution are now common is the forest fires which generate a compound emissions are carbon dioxide (CO_2).Several studies in the medical literature documenting a causal link between air pollution, especially CO_2 and negative impacts on health after short-term exposure, especially the unknown long-term health consequences of exposure to pollution. Some studies related to fire management models and CO_2 emission reductions of them use the method of mapping risk of forest fires and the use of reforestation and the elimination of illegal logging is considered effective to implement.

Keyword: *Air pollution, forest fires, carbon dioxide*

Introduction

Today, air pollution is a serious problem faced by industrial countries. Air pollution raises a very adverse impact. The impact caused by air pollution is not only a direct impact on human health, but also can damage the environment.

One of the sources of air pollution are now common is their forest fires. One of emissions contained in air pollution as a result of the forest fires are compounds of carbon dioxide (CO_2).[1]

CO_2 emissions and global warming potential to be one of the considerationsbiggest environmental problems today. Due to the increase global population and industrial development quite rapidly result in the concentration of CO_2 in the atmosphere has grown an average of 2 ppm / year for the last 10 years.[2]

Materials and Method

In this literature review, keywords used to get a reference to a related article is “air pollution”, “forest fires” and “carbon dioxide”. The scope of the literature review will be limited beginning in 2011 to the top with the goal of search engines can produce journals - journals and references are more focused on development problems and solutions. Reference is also limited in the famous journal, namely Science Direct, because the journal can be accessed free of charge. Search results using keywords found about 6,200 research articles and 7,800 books. However, based on the criteria of the carbon dioxide, only 12 articles were reviewed,

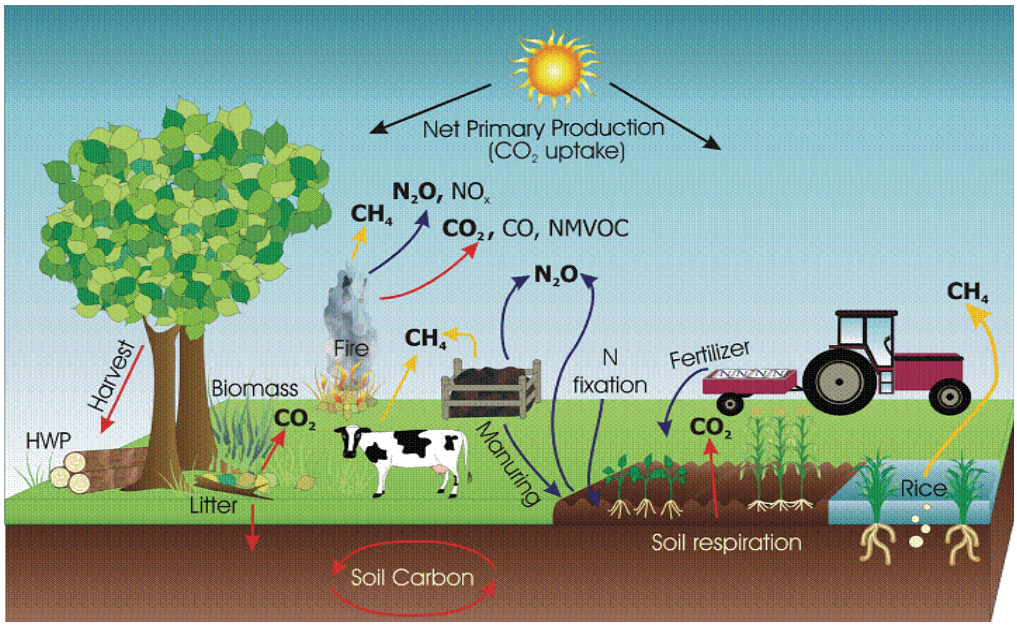
Result and Discussion

Air Pollution, Forest Fire and Carbon

Air pollution can be defined an activity in the atmosphere, where the concentration of the substance - a substance that is sufficiently high and is above the ambient value and can have an impact - the impact on humans, animals, vegetation, or material. In addition to disrupting the aesthetics, small-sized particles in the air can be inhaled into the respiratory system and cause respiratory illness and lung damage. Particles that get into the respiratory system will be set aside depending on the diameter.[3]

One of the sources of air pollution are now common is their forest fires. One of emissions contained in air pollution as a result of the forest fires are compounds CO_2.[4]

CO_2 is actually a component compound that naturally exist in the air. Effect of CO2 is called the greenhouse effect of CO_2 in the atmosphere which can absorb heat energy and obstruct the course of the heat energy from the atmosphere to the surface is higher.[(5)]



Picture 1

Cycle greenhouse gas

Transport, transfer and accumulation of CO_2

The oceans play an important role for the distribution of this is because the CO_2 concentration at the level of atmospheric CO_2 that is controlled by the concentration of CO_2 in the oceans. Cycle CO_2 in the oceans separated in two senses, namely CO_2 natural and anthropogenic CO_2. Since the increase of anthropogenic CO_2 in nature, the sea has a role as an absorber of anthropogenic CO_2 to maintain the balance of the Earth system. On the other hand, the increase in this concentration in the feared sea will also affect the balance mechanism existing systems in it. Therefore, the amount of CO_2 that accumulates in the water column and how its distribution among the oceans of the world, will continue to be examined from year to year due to increased concentrations of anthropogenic CO_2 in the atmosphere.[6]

CO_2 in the atmosphere is also absorbed by plants through photosynthesis berhijau leaves, but the amount of CO_2 available to that used by plants on the earth is not balanced anymore. The more CO_2 and other greenhouse gases in the atmosphere, the more infrared radiation is absorbed, the higher the intensity of the greenhouse and consequently the temperature at the earth's surface is also higher.[5]

Diffusion of CO_2 from tissues to the bloodstream and lungs are also caused by the pressure difference of CO_2. CO_2 pressure in tissues, veins, arteries, and alveoli. Therefore, the CO_2 in the network will be transported to the alveoli in the lungs.Literature and scientific documents relating to CO_2 inhalation exposure effects on human health and psychomotor performance, linear physiological changes in the circulatory system, cardiovascular and autonomic on exposure to CO_2 concentrations in the range of 500-5000 ppm. Human experimental studies explain that short-term exposure to CO_2 begins at 1000 ppm affect cognitive performance including decision-making and problem solving. Changes in the autonomic system for low-level exposure to CO_2 may involve this effect. Further research is needed on the long-term effects of exposure to low levels of CO_2 in the autonomous system. A number of epidemiological studies show a link between low-level exposure to CO_2 ranging from 700 ppm and symptoms associated with the building. Respiratory symptoms indicated in children who are exposed to indoor CO_2 concentrations

higher than 1000 ppm. However, in other comorbidities pollutants may be involved in these effects.[6]

The amount of CO_2 that accumulates in the water column and how its distribution among the oceans of the world, will continue to be examined from year to year due to increased concentrations of anthropogenic CO_2 in the atmosphere.[7]

Impact on the environment

Population growth and the use of fossil fuels at the same time as the main energy source in the region has led to the release of more CO_2 into the atmosphere with negative consequences on the environment.[8]

CO_2 is a greenhouse gas implicated in global warming trend. Snow and ice have declined closure, the ocean temperature has increased and the level of the ocean's surface also increased over the last century. Rising sea levels could submerge many areas. Extreme weather conditions are causing droughts, floods and typhoons, as well as the distribution of disease-causing organisms may occur predictability.[9]

Health impacts caused

Several studies in the medical literature documenting a causal link between air pollution and negative health outcomes immediately after exposure, much less is known long-term health consequences of exposure to pollution. A study using Indonesia's forests in 1997 as a natural experiment, which estimates long-term effects of air pollution on health outcomes that take advantage of the properties of longitudinal from Indonesia Family Life Survey (IFLS), by collecting individual data detail about many health outcomes, both in Discovered in 1997 and 2007. the significant negative impact of pollution, which survive in the long term. Men and older people most impacted, while the children seemed to recover almost completely from this initial shock. For the whole population,[10]

Judging from some of the literature and scientific documents relating to CO_2 inhalation exposure effects on human health and psychomotor performance. Linear physiological changes in the circulatory system, car-diovaskular, and autonomous exposure to CO_2 concentrations in the range of 500 to 5000 ppm. Human experimental studies have suggested that exposure to short-term CO_2 begins at 1000 ppm affect cognitive performance including decision-making and problem solving. Changes in the autonomic system for low-level exposure to CO_2 may involve this effect. Further research is needed on the long-term effects of exposure to low levels of CO_2 in the autonomous system. A number of epidemiological studies show a link between low-level exposure to CO_2 ranging from 700 ppm and symptoms associated with the building. Respiratory symptoms indicated in children who are exposed to indoor CO_2 concentrations higher than 1000 ppm.

However, in other comorbidities pollutants may be involved in these effects. In the context of a significant linear increase of the global ambient CO_2 concentrations caused by anthropogenic activities and resources, reduce CO_2 levels in the room through the vents to the ambient air is increased energy consumption in air-conditioned buildings. To control CO_2-efficient energy in the building from the surrounding air, the rise in atmospheric CO_2 concentration needs to be suppressed. In the context of a significant linear increase of the global ambient CO_2 concentrations caused by anthropogenic activities and resources, reduce CO_2 levels in the room through the vents to the ambient air is increased energy consumption in air-conditioned buildings. [6]

Handling Model That Can Be Applied

One of the research related to overcoming the problem of forest fires by using Data Base Inventory of Forest Resources, based on four aspects topographical factors, human activities, climate and forest characteristics. A conceptual framework for mapping the risk of fire is developed by integrating Database Forest Resource Inventory. Potential risks of forest fires and map the risk zone in the Chinese heritage sites was assessed using GIS.[11]

Research presents the results of a study of absorption and reduction of carbon dioxide emissions with the use of ecosystem services in the nature reserve (reforestation) and the elimination of illegal logging in the state of the newly formed ijevan, located in Tavush region of the Republic of Armenia.[12]

Resistance

In general, the fires caused by three major factors

that fuel conditions, weather and culture, including the lack of public awareness of the importance of forest preservation. All three of the above are causing difficult implemented regulations on forest fires.[4]

Success

Improvements in the estimation of the risk of forest fires and fire risk zone mapping is essential to reduce the negativethe impact of fires and to facilitate the planning of the protection of forested areas. The success of the methodthe estimated risk of forest fires and fire risk zone mappingsimply and reliably to assess the potential risk of forest fires and map the forest fire zones in a place with little historical data about the fire. This method helps provide reference for decision makers to prioritize areas for conservation of cultural resources and / or culture, and enhance the practical application of fire prevention and suppression.[11]

Meanwhile, the results of studies related to the absorption of CO_2 emissions was found that forest ecosystems asylum state ijevan 440.7 metric can absorb carbon and can reduce CO_2 emissions each year. And the elimination of illegal logging, the number could increase carbon sequestration. As a result the amount of carbon dioxide in the atmosphere will be reduced 39.07 metric. Research on CO_2 reduction with reforestation system and the elimination of illegal logging are found it turns out the value of carbon sequestration forest ecosystem services by lead economic benefits will be surplus.[12-16]

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Conflict of Interest – Nil

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