Pollution control assignment

-To what extent is pollution control a key strategy in reducing health risk.

Introduction ‘ Pollution is a harmful change in the natural environment caused by human activities: This may be the release of substances which are toxic to either animals or plants, or it may be the release of energy (heat, light, radiation, or sound) which interferes with the development of animals or plants. ‘ As claimed by http://www. sambal. co. uk/pollution. html. This would indicate that control would involve minimising health risks. Health is defined as a ‘ complete state of mental, physical and social well-being, with the absence of disease or infirmity. WHO website) therefore ‘ health risk’ is stated as ‘ the possibility that something unpleasant or unwelcome will happen’. The amount and types of pollution can correlate to varied types of health risk; this report will investigate the complex causes of health risk and how pollution control can minimize effects. There are different types of pollution. The first type of pollution is air pollution that is caused by emissions of harmful substances into the air from vehicles and factories etc. Air pollution results in acid rain, ozone depletion and smog. Water pollution is caused when things that deteriorate water quality become a part of it.

Next type is land, or also known as, soil pollution that occurs due to the accumulation of solid waste and other non degradable materials into the soil. Another type of pollution is noise pollution that is common in cities and occurs when the level of noise is so high that it is uncomfortable. Another type is radioactive pollution that is caused by the increased use of nuclear energy, although it does not release pollutants like CO2, it is still harmful due to the high penetrating power. The last type of pollution is thermal or heat

pollution that adds heat to the environment and increases the temperature of the environment.

Effective and sustainable management of pollution ‘ To what extent is pollution control a key strategy in reducing health risk'[pic] How far? Reducing morbidity and mortality and improving life quality. Figure 1 exhibits the health risk equation: [Health risk = Risk + Vulnerability ??? Management] This enables the calculation of anything that would cause an individual harm (health risk) which involves the specific type of disease (risk) added to the likeliness a person is to be affected (vulnerability) minus the different management techniques.

The equation allows one to calculate the health risk, whilst minimising the actual risk and vulnerability of the individual. Pollution can be sustained or incidental. Sustained pollution is an example of the problem people face in China. Black carbon is a major component of Chinese haze, with a small diameter, meaning particles can penetrate deep inside the lungs. China’s emissions of nitrogen oxide have increased 3. 8% a year for 25 years. http://factsanddetails. com/china. php? itemid= 392&catid= 10⊂catid= 66 Or pollution can be incidental; such examples would include Bhopal and Chernobyl.

This report will discuss the following case studies in order to conclude the ‘ extent to which pollution control is a key strategy in reducing health risk’; Bhopal demonstrates effects of incidental pollution on both the environment and the economy and how better management of pollution control can contribute to helping reduce health risk. China faces a more sustained

problem of pollution, this report will compare and contrast the dangers of health risk and how they are heightened in this country; respiratory diseases affect a large proportion of the population, this could be reduced through better pollution control.

Skin cancer in Australia is focused more on lifestyle choices affecting the risk factor, and whether pollution control will help rule out one of the main causes of death in Australia. HIV/AIDS is a virus which attacks the immune system, Malaria is caused by a vector-Bourne disease and Obesity is a lifestyle choice. These are dependent on environmental, economic and social factors and don’t necessarily involve pollution in the developing of health risk; this is to demonstrate the fact that it is too complex and far-fetched to outweigh any possible health risk just by undermining pollution.

How Primary, secondary and tertiary management of risks are controlled determine as to whether diseases will re-emerge or be ruled out. Key players involved in this process include- Governments, WHO, UNICEF. Palliative, curative and vertical strategies are examples of pollution control management that will be discussed further in this report. This report will cross-section the complex causes of health risk and how pollution control may or may not reduce health risks, including reference to climate change. Models;

To help in assessing how pollution control could reduce health risk the models that will be demonstrated in this report include the externality gradient which shows the closer people were to the explosion in Bhopal, the more affected they were. The epidemiology model can be analysed to help

come to a stronger conclusion, backing up one or both sides of the argument. It also explains the relationship between development and GDP of a nation. The Kuznets Curve clarifies why China faces such a difficulty with pollution and how population are dependent on almost double that of an MEDC such as the UK.

Methodology; To prevent bias, cross-sectioning of websites were undertaken. The Blacksmith Report was used to gather information on areas where pollution control is greatly needed, or is already being carried out. The World Health Organisation (WHO) is involved in this report, sourcing has been carried out to establish the information collected from the website. This website was used for pollution in China along with ‘ Facts and Details’ however the information cannot be guaranteed entirely reliable, therefore a range of sources such as the Lancet and Geo-file articles were also a part of the research.

Pollution in China and management of this health risk is collectively discussed and sub-sectioned into facts and figures of pollution and its risk to the population, along with inequalities amongst health care. However the management of pollution alone will not guarantee a reduction of health risks altogether. The difference in sustainable pollution management is that the source of the health risk is abolished, which involves air, land and water sources.

How effective the removal of the pollution source will be is to whether re-emergent diseases will continue affecting health or not, some health risks don’t correlate individually with pollution such as HIV/AIDS and Malaria, but

environmental impacts and funding may increase or decrease the chances of the health risks becoming a an epidemic. Malaria is related indirectly to pollution through climate change, as the warmer the temperature, the more foreseeable the habitat is to develop into breeding for the mosquitoes. Strategies such as nets and possible vaccines are strategies keen to reducing Malaria deaths across continents such as Africa; hese will have a greater impact on health risk than pollution control. Whether management is high in sustainability classes it as a key strategy in reducing health risk, the source being dealt with effectively will lead to longer term management of the risk, with shorter term treatment of just symptoms being classed more ‘ unsustainable’. Cure is more successful than prevention as there is still the risk of re-emergent diseases. With the case study of obesity, the key players involved in try to lower this steep gradient include www. obesitycampaign. org/ – The campaign to end obesity (CEO), NHS, Governments, Educational Advisers, www. ctivelivingresearch. org/node/11932 – Preventing childhood obesity. These are all examples of effective measures of controlling a health risk, obesity doesn’t correlate with pollution at all, and therefore it cannot be a strategy to reduce all health risks, just those in relation with it. For pollution control to be most effective, all players involved in the management have to contribute to see a difference, its one thing saying to reduce pollution but another thing to start management. Lifestyle choices are just as important as pollution control; individuals have as much contribution as companies do.

Australia’s skin cancer is an example of this. Advertisements such as SunSmart introduced campaigns to encourage the use of sun cream, hats

and t-shirts as an effective measure of reducing the risks of Skin cancer, especially amongst children. Cancer organisation websites such as http://www. cancer. org. au/cancersmartlifestyle/SunSmart/Skincancerfactsandfigures. htm evaluate the risks and dangers of the sun, as well as the statistics of how many Australians are diagnosed with skin cancer daily. The methods of prevention i. e. Slip, Slop, Slap have helped reduced numbers since previous years as there is no cure.

However preventing sun cancer involves the media, government, education to alert awareness on the risks and how easy it is to develop; pollution control doesn’t necessary aid in reducing skin cancer directly, on the other hand, pollution is related to ozone depletion and global warming. Thus making the UV rays more harmful, therefore in the long term, pollution control could be claimed a key strategy in reducing health risk, just not straight away. Bhopal was a health shock to all its residents; the disastrous incident shows how pollution control can reduce health risk. Factual websites such as www. world-nuclear. org/info/chernobyl/inf07. tml and online newspaper websites http://www. guardian. co. uk/environment/bhopal were used in gather information on the Chernobyl case study, some sites proving more helpful than others so cross-sectioning was carried out including Wikipedia http://en. wikipedia. org/wiki/Bhopal_disaster and the BBC report http://news. bbc. co. uk/onthisday/hi/dates/stories/december/3/newsid_2698000/2698709. stm to gain a more reliable perspective. This report will examine whether

prevention on the pollution incident was at all possible or if it was down to poorer managed pollution control that risked the lives of many in the area.

The accident was in relationship to pollution directly and so will lead assistance in claiming how far of an extent pollution control is in reducing health risks. Case studies; Pollution is a great risk to health in China. According to the World Bank and WHO between 300, 000 and 350, 000 people die from indoor and outdoor air pollution and that 16 of the world's top 20 cities with the worst air are in China. This could be a result of the cities being full of heavy industries, metal smelters and coal fired power plants; sending tons of carbon, metals and gases into the air.

Only a third of the 340 Chinese cities that are monitored meet China's own pollution standards. Coal has been tied to a number of health problems. In towns like Gaojiagao in Shanxi, it has been linked with a high number of birth defects such as neural tube defects, cleft pallets and congenital heart disease. Underground coal fires are consuming 20 to 30 million tons of Coal a year, pumping tons of ash, carbon dioxide, methane and carbon monoxide into the atmosphere. These types of air pollution cause premature births, low-birth weight babies and lung cancer- which is now the leading cause of death in China.

In the last five years the number of deaths from the disease has risen 18. 5% to 34 per 100, 000 people. Recent policies have encouraged desulfurization and other filleting technology in power plants, from 2005-2009, China cut its sulphur dioxide emissions by between 22million and 25million tons. Beijing introduced environmental standards for buildings, and millions of homes

have converted from coal to gas, with dozens of high polluting factories relocating or being forced shut. In 2008, the Olympics was held in China, so in this period more than 50, 000 smog-producing taxis ere taken off the streets and replaced with more environmentally friendly models, cars with even numbered license plates were barred from driving two days in the week, cars with odd numbered license plates were barred from driving another two days of the week. More than 4, 000 buses were put in operation that ran on natural gas and produced virtually no emissions. This proves effective measures of pollution control can aid in controlling risks to health, in this instance, the focus is more on curing the health risk by limiting pollution rather than just masking the factors.

On the other hand, risks to health aren’t just down to pollution and how well it is managed, but how the health risk is dealt with. Health inequalities are present in China as consequences of regional differences of both health financing and health care use. Equality in healthcare refers to a system in which services are distributed according to need rather than socioeconomic status. China’s health inequalities have risen from simple matters such as imbalances in government and market roles leaving some areas more developed than others.

This then leads to questions of fairness and health distribution in the country; due to the economic boom China has since struggled with simple necessities to keep even health distribution. This questions how effective managing pollution would be to reducing health risks, because the way in which health risks are dealt with is uneven; depending more on your status than the threat to your life. It is far too complex to simply state controlling

pollution will minimise lung cancer and respiratory diseases in China, because the health care is as equal to blame as well.

Pollution control is essential to reduce health risk, in order to reduce incidents of air pollution affecting the lives of China’s population. In this instance there is clear factual evidence and statistics which prove the correlation between pollution and putting health in danger. The reduction and better managed pollution control has already seen a decline in the amount of health problems since the strict regulations of the 2008 Olympics, with less pollutants and emissions affecting both health and the environment will assist in reducing risks to wellbeing.

However not just pollution control is essential, health care plays just as an important role in reducing a health risk, some diseases related with pollution such as respiratory illnesses or lung cancer, can be as easily treated if health care is offered to the individual. Due to the segregated distribution of health care services, the likeliness of one individual being treated over another because of their certain socioeconomic status is highly likely. Ruling out all possible risks of pollution involves the way they are treated.

Pollution control is an important strategy in reducing health risks, but it is not the only one that plays a part. Some researchers suggest that economic development eventually reduces environmental damages per capita when sufficient wealth and technology allows nations to adopt clean production methods and move towards a service-based economy. Also, environmental quality is generally considered a “ normal good” ??? meaning that people will demand more of it as they become wealthier. The Environmental Kuznets

Curve hypothesis demonstrates a relationship between economic development and environmental damages.

According to this logic, environmental damage per capita increases in the early stages of economic development, reaches a maximum, and then declines as a nation attains higher levels of income. If the evidence supported this hypothesis, then it would imply that economic development will eventually promote a cleaner environment. [pic] The Environmental Kuznets Curve This shows pollution fatigue in reducing health risk. However, the relationship does not appear to demonstrate the situation in China; as environmental impacts such as carbon dioxide emissions tend to show a positive relationship with average income.

This means that carbon emissions are expected to increase as the economic growth occurs. China is one of the world’s wealthiest countries, with an ever expanding population. In addition, the economic development alone is a relevant factor in determining environmental impacts, as well as the distribution of resources. Sustainable development focuses on the imperative of reducing economic inequalities along with preserving the environment. This concludes that although the effects of pollution in China is tormenting the economy; costing health services thousands to treat respiratory diseases, the source of this pollution is from the economy.

According to SunSmart, an Australian co-operation that encourages safety in the sun; ??? Skin cancers account for 80% of all newly diagnosed cancers. ??? Two in three Australians will be diagnosed with skin cancer by the time they are 70. ??? GPs in Australia have over 1 million patient

consultations per year for skin cancer. ??? Around 434, 000 people are treated for one or more non-melanoma skin cancers. In 2007, 448 people died of the disease. ??? More than 10, 300 people are treated for melanoma, with 1279 people dying in 2007 alone. ??? Melanoma is the most common cancer in people aged 15-44 years. Excluding non-melanoma skin cancer (1), melanoma is the fourth most common cancer in both women and men. ??? Australia has one of the highest incidences of skin cancer in the world, at nearly four times the rates in Canada, the US and the UK. ??? The rate of melanoma incidence in women has risen by an average of 0. 7% a year between 1993 and 2003 ??? a total increase of 6. 8% over this decade. For men, the rate has risen by 1. 7% a year, a total of 18. 7% over the same period. ??? The five-year relative survival rate for melanoma is 90% for Australian men and 95% for Australian women. Skin cancer is the most expensive cancer. In 2001, it was estimated the treatment of non-melanoma skin cancer cost $264 million and melanoma $30 million. ??? GP consultations to treat non-melanoma skin cancer increased by 14% between 1998-2000 and 2005-2007 ??? from around 836, 500 to 950, 000 visits each year. These figures are extremely high considering the population is not much greater than the UK. This seems to be the worst health risk of the entirely country, with ‘ two in three Australians being diagnosed with skin cancer by the time they are 70’.

The aim of this campaign is to discourage bathing in the sun for long periods of time, especially at the hottest part of the day between 11 and 3, the advertisement of ‘ Slip, Slop, Slap’ which has been a popular TV commercial for over 20 years aims to target vulnerable age groups such as children to

encourage shade, clothing and sun-cream to protect their skin from the sun’s damaging rays. Pollution control isn’t necessarily a major factor for the encounter of skin cancer; on the other hand, it is indirectly related.

The emissions and pollutants intoxicating the atmosphere cause ozone depletion and global warming, therefore causing climate change. The more harmful the sun’s rays the increased chance of developing skin cancer. Long term management should involve pollution control to aim to decrease the amount of skin cancer statistics each year, along with key players such as governments, education, and specific campaigns targeting the use of cancer preventing materials like clothes. The economy and media is partly to blame for the inclination of skin cancer reported, because it was seen as ‘ trendy’