

# Pollution prevention assignment



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I will analyze the advantages and disadvantages of such programs, including its long-term viability, its economic feasibility and the political process as well as ways to develop sustainable policies. Human population stabilization is one of the many key components to helping to reduce pollution. The Earth's carrying capacity is being pushed and perhaps exceeded and the human population is a huge cause of it. We are already seeing the consequences of the increased population through overfeeding, polluted waterways, and deforestation and by making family planning services available to everyone we could start to stabilize the population. Programs vary from culture to culture, but most provide information on birth spacing, birth control, and health care for pregnant women and infants. " (Miller & Espanola, 2012) The government in China provides various services to couples in regards to family planning and if the residents of China follow the guidelines then they are rewarded. If the government had not stepped in, China was heading to a mass starvation because they were meeting their carrying capacity for the country. India has had great success also in providing family planning services.

Using education, empowering women, providing family planning and birth control contraceptives, and incentives are all good places to start.

Empowering women has been shown to slow the population growth Pollution Prevention 3 and this is done by educating them. Providing the women with ability to earn an income, control fertility through birth control, and simply living in a society that lets women have the rights to make their own choices is important. Family planning goes hand-in-hand with empowering women also.

Providing healthcare and education services to couples help them decide the size of family that is appropriate for them. Through both of these, family planning and empowerment of women, we are able to decrease the stress we put on our environment. “ The government has promulgated a series of policies and measures to control population growth, utilize resources, minimize the environmental deterioration, and thereby maintain the harmonious relationship between population, resources, and environment. (Chin-Quo, 201 2) But even with all the governments rewards and policies, the public thou education will not understand and/or follow them. The following is a table showing the possible outcome if people start to think about population and the environmental impact by cooperating with the policies and guidelines. Payoff matrix for both players faced with different population strategies and the changes of farming land

		Player B	
		Cooperative	Uncooperative
Player A	Cooperative	Population grows germinating land decreases zero	Population grows 0. ?? rming land decreases 2. 5%
	Uncooperative	Population grows 0. 5?? rming land decreases 2. 5%	Population grows ?? rming land decreases 5%

(Chen-KChin2Quo2) 4 As shown above without the cooperation and understanding of the public, the human population will destroy the precious, few natural resources our planet offers. Residential solid waste is another source of large amounts of pollution. Some of the most common causes are listed below that add to the residential or municiMunicholid waste (M SW). Fertilizers \* Weed killers, insecticides, and fungicides \* Loose grass clippings and leaves and soil from exposed areas in the yard \* Pet droppings \* Poorly maintained septic systems Detergents from washing your car and other common household cleaners \* Improper disposal of paint, oil and other chemicals. This garbage

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from our homes and places of work often doesn't make it to the landfill and instead ends up in our rivers and lakes. When it does make it to the landfills, it is often burned in Incinerators in the more-developed areas, whereas in the less-developed countries it ends up in an open dump.

In those countries, the public often goes and picks through the waste to see if they can find anything to recycle, reuse, or even sell. The " more-developed countries produce 75% of the world's hazardous wastes, and the United States is the largest producer. " (Miller & SpoolmEspanola) A change in the way the public thinks is the most favorable approach to reduce the amount of solid wastes. Limiting the consumption of raw materials and increasing the rate of recovery and reuse of waste materials is a simple notion, but this change in our current society has proved extremely easier said than done.

By educating the public about the 3 R's; Reduce, Reuse, and Recycle, and changing our current habits we can lessen our MSW. Thinking about the packaging of material and buying secondhand is helpful. Avoid disposables when you can and buying in bulk when possible helps too. " Every year, the United States generates enough MSW to fill a bumper-to-bumper convoy of garbage trucks encircling the globe almost eight times. " (Miller & SpoolmEspanola) This is an awful statistic and needs to be changed by making the public aware.

The Commercial and Industrial solid waste problem is not helping either. This is the waste produced by farming, mining, and other industries that supply the public with goods and services. Experts have recently incorporated a "

fourth R": " Re-think", with the implied meaning that the present system may have fundamental flaws, and that a thoroughly effective system of waste management may need an entirely new way of looking at waste. Source reduction involves efforts to reduce hazardous waste and other materials by modifying industrial production.

Source reduction methods involve changes in manufacturing technology, raw material inputs and product formulation. " (PleasePlease) By holding the extended producer responsible is an approach to encourage the integration of all costs associated with products throughout their life cycle (including end-of-life disposal costs). This is true for all the waste including the hazardous waste. If the solid waste from production can be reduced the less that will end up in the landfill. There are more and more companies slowly adopting this thought of the fourth R.

Donating used electronics for reuse extends the lives of valuable products and several electronics retailers offer Pollution Prevention 6 take back programs or sponsor recycling events. By recycling electronics we can prevent used electronics such as computers, TVs, aTV's cell phones ending up in the dump. All in all industrial and commercial solid waste recycling can help to preserve our natural resources by decreasing the demand for more new material. It also helps to conserve energy and reduce greenhouse gases. Wastewater is another cause of pollution.

The ever growing population continues to pose a problem with regards to wastewater. The amount of wastewater produced is increasing and our current wastewater treatment systems are unable to keep up. The current

system is broken into three parts; primary, secondary and tertiary treatment. The primary consists of temporarily holding the sewage in a basin and letting the heaviest solids settle to the bottom. The oils, grease and lighter solids float to the surface and then are removed. The remaining liquid is discharged or subjected to the second part of the treatment process.

The secondary treatment removes biological matter by using micro-organisms. This is the biological part of the process and this water can be used for agricultural purposes. “ Nonpotable wastewater effluent include irrigation, industrial process or cooling water, and recreational impoundments (such as lakes or reservoirs for public use). “ (Wastewater reuse, 2006) Then onto the third step of the treatment is sometimes called the chemical treatment. The water is treated with chlorine, ozone, or other disinfectants before it is released into the streams and rivers. Potable uses of high-quality wastewater effluent can be achieved by sending it back to water supply reservoirs, to potable ground-water aquifers, or directly to water treatment plants. ” (Wastewater reuse, 2006) unfortunately the system is not perfect and it leaks and this can cause contamination to overflow into our groundwater and our already strained water system. Wastewater is the water collected from any of your drains, including rainwater and is connected to the main public wastewater system.

We can do our part to decrease the amount of wastewater there is by taking small steps like reusing wastewater wherever possible, not disposing of kitchen scraps through the use of an in-sink style garbage disposal, turning the water off when brushing your teeth, take shorter showers, fix dripping faucets, using the washing machine and dishwasher only when full, and

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installing a water-saving devices in your house. Grease, oil, pesticides and herbicides are difficult to remove in the sewage treatment process so being conscience of how you dispose of them is important also.

The solution to the wastewater problem really boils down to educating people the small things they can do to help lessen the load and researching new ideas for treating/disposing our wastewater. There are many ideas out there to reduce and prevent water pollution and using nature-based systems instead of the conventional treatment system is one of them. Treatment through the use of wetlands is one where it uses aquatic lants landsnaturally cleanse water. Florida, the U. S. , and the world have tried these treatment wetlands as a cost effective alternative for water and wastewater management.

This option uses the principles of sustainability and doesn't fight nature instead it tries to flow with it. The biggest solution to the reducing pollution and/or eliminating waste is to recycle. “ In a world of increasing material scarcity it is important to make the best use of all resources. The intelligent adoption of recycling techniques allied with good design practice which allows for materials to be reclaimed fter tafter useful life is over, can do much to conserve raw materials and energy, minimize pollution and save money.

It would be too simplistic to expect people 8 voluntarily to cut back on their standard of living so that major energy and materials savings can be made, but waste minimization followed by recycling does offer the potential for considerable savi nsaveinagsut major sacrifices on the part of the consumer.

“(Recycling, 2000) The primary or closed loop process is the type of recycling process most are aware of. This is the recycling of glass, plastics, paper and aluminum into new products that are the same. The other process is called an open loop or secondary recycling. It is the using of waste materials and changing them into a different product.

Recycling is not perfect though and does have some disadvantages. It can be costly but most believe the cost outweighs the positives. We live in a throwaway society and if we would think to follow the three R's in order we could reduce our waste by huge amounts. The benefits of recycling are huge such as the jobs it produces, less of a need for landfills, prevents pollution by the manufacturing of products from new materials, and it saves energy.

Recycling also decreases greenhouse gases, conserves our natural resources, and most of all it helps sustain the environment for future generations.

Again though just like all the other examples of ways to reduce or eliminate our huge amounts of pollution it all comes down to educating the public. Through creative thinking and planning there are ways to reduce pollution through reducing or eliminating waste at the source. Sometimes this is done by modifying the production process, promoting the use of non-toxic or less-toxic substances, implementing conservation techniques, re-using materials rather than putting them into the waste stream but mostly it is by educating the people.