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WASH Assignment Assessment 4

Strategia Netherlands

* 1. **Explain what municipal solid waste (MSW) means.**

Municipal solid waste incorporates all types of solid non-hazardous waste produced by the public; households (refuse), industry (restaurants), institutions (schools/hospitals) and commercial activities (street-sweeping). Collection of MSW is usually the responsibility of Municipalities or Local Authorities/Governments, typically consuming between 20-50% of municipal budgets in developing countries (Diploma in WASH Module 4 Notes).

The estimated quantity of Municipal Solid Waste (MSW) generated worldwide is 1.7 – 1.9 billion metric tons (UNEP. 2010. Framework of global partnership on waste management). In developing countries, MSW is not well managed as cities and municipalities cannot cope with the accelerated pace of waste production. Waste collection rates are often lower than 70 per cent in low-income countries. More than 50 per cent of the collected waste is often disposed of through uncontrolled landfilling and about 15 per cent is processed through unsafe and informal recycling (Chalmin P. and Gaillochet C. 2009. From waste to resource.)

* 1. **Explain the importance of the following MSW properties in solid waste management or treatment.**

There are no MSW properties identified in the question to explain??

* 1. **Outline the advantages and disadvantages of source separation of MSW**

Source Separation involves separating waste into common material streams or categories for separate collection. This may be achieved using separate bin services, verge-side collections or through direct delivery of specific wastes to drop-off facilities.

Advantages of source separation of MSW

* Best practice to achieve sustainable MSWM
* Opportunity for resident/community committees to play a significant role in the success of their own source separation system
* Requires the least post-collection sorting and produces good recycled output
* Directly supports material recovery by producing a more homogenous and higher value stream which is easier to recover
* Source separation can support the diversion of waste from landfill

Disadvantages of source separation of MSW

* High operating costs – collection of materials separately, sorting costs
* Effective and relevant waste management policies need to be set and enforced by administrative authorities in order for source separation to be successful
* Communities may lack the basic knowledge on the source separation of MSW, particularly in developing countries
* Unsuccessful separation will lead to contaminated waste streams which are not valuable
* An extensive public education program is also required, which must be successful if recycling contamination is to be avoided
  1. **Discuss the challenges faced in disease surveillance.**

Disease surveillance is an information-based activity involving the collection, analysis and interpretation of large volumes of data originating from a variety of sources. The rising global burden of communicable and non-communicable diseases necessitates the institutionalization of disease surveillance to track trends and evaluate interventions (M. Kroll. 2015. Challenges to the surveillance of non-communicable diseases – a review of selected approaches).

The key challenges faced in disease surveillance are:

* Data quality - Data quality is often perceived as a major barrier to disease surveillance. Data may be delayed, missing or sporadic, impacting the ability to identify trends. Data may be based on a single census from up to a decade ago, thus potentially both out of date and a poor reflection of seasonal fluctuations in population numbers. Completeness of records can affect data quality.
* Over-reporting – this is a potential hazard when local regions are financially incentivized to exaggerate their needs.
* Under-reported - Fear of stigma within a community may prevent people from reporting symptoms to health practitioners as demonstrated by the ebola outbreak.
* Health infrastructure - local health centers in undeveloped area lack diagnostic capabilities, much of the large-scale data rely on syndromic surveillance (influenza-like-illness, diarrhoea, fever) with low specificity.
* Variability across sectors - The capacities and extent of disease surveillance vary across low- middle and high- income countries.
* Availability of funding – additional funding will be required to be made available to continue to improve disease surveillance as and the emergence of new infectious diseases and the resurgence of diseases previously controlled by vaccination and treatment are creating unprecedented public health challenges.

Challenges can be mitigated by employing new technologies such as mobile phones to relay critical data much faster and implementing training of community health workers and researchers to collect and analyse data on the ground.

* 1. **Explain 5 diseases that can be prevented by observing proper sanitation.**
* Diarrhoea - Diarrhoea is the most important public health problem directly related to proper sanitation. About 4 billion cases of diarrhoea per year cause 1.8 million deaths, over 90 per cent of them among children under five. Repeated episodes of diarrhoeal disease makes children more vulnerable to other diseases and malnutrition. The simple act of washing hands with soap and water can cut diarrhoeal disease by one-third (UNICEF. 2003. Common Water and Sanitation-Related Diseases)
* Cholera - Cholera is an acute bacterial infection of the intestinal tract. It causes severe attacks of diarrhoea that, without treatment, can quickly lead to acute dehydration and death. Cholera is a world-wide problem, especially in emergency situations. It can be prevented by access to safe drinking water, sanitation and good hygiene behaviour.
* Trachoma - Trachoma is an eye infection spread mainly through poor hygiene caused by lack of adequate water supplies and unsafe environmental sanitation conditions. About 6 million people are blind today because of trachoma. It affects women two to three times more than men. Children are also especially susceptible. Studies have found that providing adequate water supplies could reduce infection rates by 25 per cent.
* Typhoid - Typhoid fever is a bacterial infection caused by ingesting contaminated food or water. Typhoid fever is a life-threatening infection caused by the bacterium Salmonella Typhi. Typhoid risk is higher in populations that lack access to safe water and adequate sanitation. (WHO. 2018. Typhoid Fact sheet). About 12 million people are affected by typhoid every year. (UNICEF. 2003. Common Water and Sanitation-Related Diseases)
* Intestinal worms - People become infected with intestinal parasitic worms through contact with soil that has been contaminated with human faeces from an infected person, or by eating contaminated food.

Intestinal worms infect about 10 per cent of the population in the developing world and, depending upon the severity of the infection, lead to malnutrition, anaemia or retarded growth. Children are particularly susceptible and typically have the largest number of worms. About 400 million school-age children are infected by roundworm, whipworm and/or hookworm. In fact, roundworm and whipworm alone are estimated to affect one-quarter of the world’s population. (UNICEF. 2003. Common Water and Sanitation-Related Diseases)

References

Chalmin P. and Gaillochet C. 2009. From waste to resource.

Diploma in WASH Module 4 Notes

M. Kroll. 2015. Challenges to the surveillance of non-communicable diseases – a review of selected approaches. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4682212/>

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