RWSSP: Technical Advisory Note 4.4
Sanitation - Solid Waste Management

Introduction

Solid waste management (SWM) is the technical term for dealing with refuse, or garbage. This TAN will discuss SWM for rural villages. Solid waste is organic or inorganic, and indirectly attracts human or animal waste. Humans, animals and flies will transmit faecal-oral infections from direct contact with the solid waste, and small refuse containers that fill with rain water, are breeding grounds for mosquittos which will additionally bring malaria, yellow fever, dengue fever, etc. Watsan field staff should be facilitating activities which improve environmental sanitation in their proiject sites, in order to prevent these diseases. NSAs can inform villages of the different organic and inorganic waste solutions as different options. Communities can then decide SWM improvements which avoid creating infectious conditions.10-15% health improvements of a RWSS project can be attributed to good SWM.

Organic and In-Organic waste

Organic waste degrades and decomposes, whilst inorganic waste can last for generations, such as metal, rubber, and plastic. In rural areas, some waste is re-used, e.g. feed for animals, containers, toys, etc. This reduces solid waste problems, however, a build up of materials will occur and infectious disease conditions can flourish without a community solid waste management plan.

Solutions

Simple participatory activities can assist a community to determine a best course of action for SWM. Some of the simplest solutions may involve designated community sites, where inorganic waste can be disposed or prepared for re-cycling, whilst organic waste is managed by individuals so as to feed animals. In much larger communities, and depending on the environmental conditions, it may be necessary to collect waste, in which case a tariff system or daily/weekly deliver system is set up and managed. At a smaller and more appropriate level, burying or burning solid waste, combined with a separation of organic from inorganic materials are ideal as options.

Burial- is a common method and involves the digging of a large pit, which is filled gradually. A thin layer of soil is supposed to be spread over the waste in the evening. It is inexpensive, simple and easily managed. However, fills quickly, and can leave recesses in the ground that may take some time to settle. Burial pits should always be fenced to prevent accidents.

An uncovered pit attracts rats and cockroaches which can cause typhoid. Mosquito can breed causing malaria or dengue fever.

Covered pits- are a very economical and safe way of managing solid waste. Their design resembles traditional pit latrines whereby a large hole can be excavated, laid over with strong timber and soil, leaving a hole and suitable cover with which to dispose and hide waste. A number of pits can seperate specific waste materials, particularly where recycling is possible e.g. plastic, metal, etc.

Burning- is another common method which if done correctly is efficient, and disposes of the waste almost completely. The disadvantages are when some inorganic materials are introduced and cannot be completely removed, or cause harmful toxic smells which can cause serious respiratory problems (rubber, plastics and oil based liquids). Additionally, communal burning pits can often burn for unpredictably long periods and in the extreme, cause damage to land, property or crops.

Concluding comments

A significant number of illnesses can be attributed to poor solid waste management. Refuse that is left discarded in and around the village attracts animals in search of food, and is perfect breeding conditions for other vermin and insects. The animals leave their own waste behind, and the vermin and insects can carry infectious parasites that can lead to sickness in the village, especially the young and more vulnerable groups.

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