Module 2- WASH in Emergencies

Assignment 2:

*Water Hygiene and Sanitation (WASH)*

BY

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SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF A DIPLOMA IN WATER SANITATION AND HYGIENE TO STRATEGIA NETHERLANDS

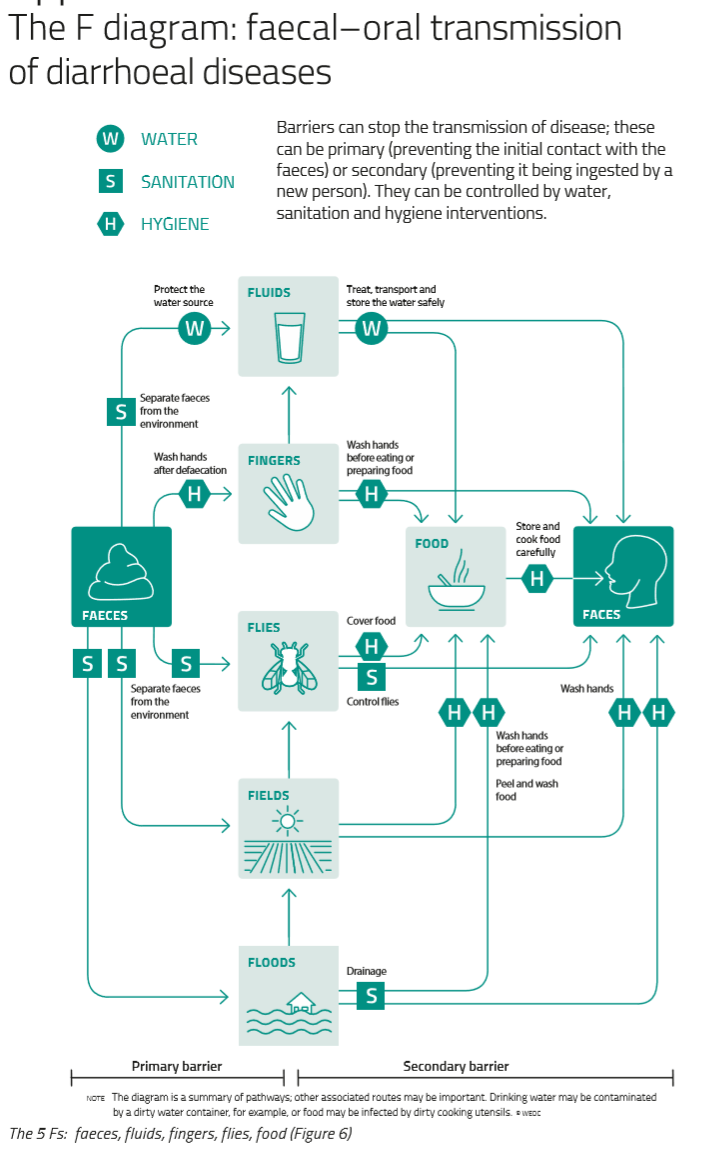
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**Introduction:**

As stated by former Nobel Peace Prize Winner and Human Right activist Nelson Mandela in his 1993 speech: “Thus shall we live, because we will have created a society which recognises that all people are born equal, with each entitled in equal measure to life, liberty, prosperity, human rights and good governance.” (Mandela, 1993). This quote is yet another inspiring demonstration of a great influencer and human right activist who used his position in order to promote what the Sphere Project guide “Humanitarian Charter and Minimum Standards in Disaster Reponses” considers the core principles which should guide anyone working in the Humanitarian Help and Development sector: alleviating suffering, meeting essential human needs and restoring life with dignity for populations in need (The Sphere project, 1998, p. 1). This research paper while still focusing on Water, Hygiene and Sanitation (WASH) aspects of disaster response, puts an accent on WASH in Emergency contexts. This paper will therefore pivot between five central questions, namely: (1) Why is hand-washing an essential aspect of WASH interventions? (2) What are the main standards in WASH interventions in emergencies? (3) Waste Management is becoming one problem in the emergencies. Why? (4) Discuss how environmental health and sanitation affect the nutritional status of the vulnerable groups; (5) Assuming you have been appointed to head an organisation dealing with health development in your area, describe the critical factors that you will consider in planning for health service in that area.

1. **Why is hand-washing an essential aspect of WASH interventions?**

As previously stated in the Introduction, this second assignment puts an accent on the Emergency aspects of WASH interventions. It would therefore be senseless to address the particular aspect of hand-washing in such interventions without primarily defining what is an emergency. According to the resource handbook for UNICEF field staff “Assisting in emergencies”, an emergency can be defined as: “(…) A situation of hardship and human suffering arising from events which cause physical loss or damage, social and/or economic disruption with which the country or community concerned is unable to cope with alone. It may result from a *natural disaster* - either high impact (e.g. earthquake) or slow-inset (e.g. drought) – or be of *man-made* causes (e.g. war, civil unrest).” (United Nation Children’s Fund, 1986, p. 3). Since the consequences of such traumatic events tend to expose local populations through great deals of stress (etc.) which are susceptible to increase their vulnerability (e.g. illnesses), a certain number of strategies (Community Organisation, public health messages, etc.) are to be encouraged within the touched population as they are neither helpless nor passive and have their own ways of coping with disasters (Strategia Netherlands, 2018, p. 8). In order to correctly chose the strategies to be prioritised in an emergency context, one must also understand the “Natural Disease Cycle as Applied to Communicable Diseases”; the classic model of natural history of a disease comprises six stages: risk/exposure factors, population susceptibility to the disease, biological manifestations of the disease, clinical manifestations of the disease, progression of the disease and return to non-diseased state(Perrin & Grenzeback, 1996, p. 128). For the sake of this assignment, this question will only address the “risk/exposure factors” and “population’s susceptibility to the disease”, more specifically, the essential aspect of hand-washing in WASH interventions. The hand washing (use of soap, wood ash, etc.) strategy is to be promoted at all time and within every community in emergency settings as a tool of disease spreading prevention (Strategia Netherlands, 2018, p. 4). Hand washing should be encouraged post-defecation (including, especially children defecation) and before preparing/handling/eating food as it is one of the five main vectors (risk/exposure factors: “the 5 F’s: faeces, fluids, fingers, flies, food”) for faecal–oral transmission of diarrhoeal diseases and it clearly increases population susceptibility to diseases as demonstrated in this diagram:



("The Sphere Handbook", 2018, p. 144).

Furthermore, the prevention of faecal–oral transmission of diarrhoeal diseases and the promotion good hygiene practices will necessitate the mobilisation of community members, the maximisation of community participation (leaders, influencers, etc.) and educational programs (from the beginning to the end of the programme) (Strategia Netherlands, 2018, p. 3). Particular attention should be directed towards food hygiene (In homes, markets, etc.), eating houses and food vendors as they can potentially represent serious health hazards if safety rules are not followed (e.g. street food vendors: study in one African City showed an alarming rate of 98% faecal contamination on their hands and food) (Strategia Netherlands, 2018, p. 1).

1. **What are the main standards in WASH interventions in emergencies ?**

First of all, according to the 2018 edition of “The Sphere Handbook: Humanitarian Charter and Minimum standards in disaster response”, there are six minimum standards in Water Supply and Sanitation (Hygiene Promotion, Water Supply, Vector Control, Excreta Management, drainage) ("The Sphere Handbook", 2018, p. 90), each of which also have sub-standards which will be addressed shortly/generally (since this question focuses on “the Main Standards in WASH interventions in emergencies”) . In order to adequately describe the main WASH standards in emergencies, one should primarily define the main objective of WASH programs in disaster response, namely: the provision of safe drinking water, the reduction of feaco-oral disease transmission and disease-bearing vector exposure by means of establishing conditions allowing for individuals to live with good health, dignity, comfort and security through the promotion of adequate hygiene practices and the reduction of environmental health risks (all of the above obtained through sanitation: excreta disposal, vector control, solid waste disposal and drainage, etc.) (Strategia Netherlands, 2018, p. 3). The definition of the standards previously mentioned can only be done in conjunction with this definition of the main objective of WASH programs in disaster response. According to the 2018 Sphere Handbook, illnesses and potential deaths related to WASH are preventable in crisis settings. It therefore makes sense that the first standard is the Promotion of Hygiene; achieved through education (raising general awareness of public health risks related to WASH) and the promotion of adequate personal, household and community measures (post initial need assessment, priority hygiene risk and behaviours targeting, etc.) ("The Sphere Handbook", 2018, p. 96). Furthermore, in order to correctly attain this standard, agencies in place are required to create optimal settings for community participation through a combining approach between the population and the agency’s general knowledge/practices/resources; the population’s inclusion in the decision-making process (according to their personal needs, what they consider a priority, etc.); the population’s participation in the mobilisation of actions (ensures pro-activeness, representation for every groups and promotes sustainability) and the provision of the necessary essential materials/facilities by the agency (if necessary). Moreover, as stated by the Strategia Netherland’s Manual, “good sanitation and water supplies are fundamental to good hygiene”, agencies should therefore not rely solely on hygiene promotion as it only represents a step in attaining good hygiene (Strategia Netherlands, 2018, p. 1). This brings us to the second Main Standard in WASH intervention: Water supply, an essential for life, health and human dignity. As advanced by the 2018 edition of the Sphere Handbook, due to the nature of crisis situations (wells and pipes often fall into disrepair due to conflict, natural disaster or lack of functional maintenance systems), inadequate access to water (quantity and quality-wise) is the well-known underlying cause of most public health problems ("The Sphere Handbook", 2018, p. 105). The water supply standard therefore focuses on ensuring the equitable access (household proximity, gendered/ethnic security, etc.) and provision (on a regular basis) of sufficient amounts of safe water for essential human needs (drinking, cooking and personal/domestic hygiene) (Strategia Netherlands, 2018, p. 2). This standard also stresses the importance of access to water that is palatable and of sufficient quality (for essential human needs while not causing a risk to health) ("The Sphere Handbook", 2018, p. 109), through a number of strategies which include promoting water disinfection (e.g. residual disinfectants: chlorine, etc.), educating community members to avoid post-delivery contamination and discourage the use of unprotected sources of water (promotion of facilities/supplies to collect/store and keep safe water that is to be later used for essential human needs) (Strategia Netherlands, 2018, p. 3).The third main standard in WASH interventions in emergencies is Excreta Management (waste matter discharged from the body: faeces, urine, menstrual waste). This standard is therefore to be considered with as much importance as the water supply standard since the safe disposal of human waste constitutes the first barrier to excreta related diseases (Strategia Netherlands, 2018, p. 3). Excreta disposal is advanced as being an essential WASH priority and an essential for people’s dignity, safety, health and well-­being. This standard puts an accent on the necessity to ensure that sites are free from human excreta (avoiding contamination of the natural, living, learning, working and communal environments) ("The Sphere Handbook", 2018, p. 113). To do so, it emphasises the importance of giving access to sufficient numbers of toilets, which are to be sited, designed, constructed and maintained in order to insure hygienic and safe use at all time (no gender-based violence; adapted to women and their particular hygienic needs, elderly people and children, HIV infected individuals, etc.) (Strategia Netherlands, 2018, p. 3). Moreover, this standard also requires the establishment/reinforcement of excreta management facilities/infrastructure and the adequate management of these systems to ensure service provision and minimum impact on the surrounding environment ("The Sphere Handbook", 2018, p. 119).The fourth main standard is Vector Control. Vectors are defined as disease-carrying agents (Mosquitoes, flies, ticks, rats, etc.); the diseases they carry are well known for being responsible for sickness and death in humanitarian settings ("The Sphere Handbook", 2018, p. 121). This standard therefore encourages the use of specialists in order to identify the disease carrying vectors and their interactions with the population. It also focuses on the inclusion of community participation programs to ensure adequate comprehension of the vector-related risks and offer the means of self-protection from vectors which represent significant health risk. Furthermore, this standard promotes several initiatives in order control vector-borne diseases which are strongly related to the achievement of the other standards mentioned above, namely: Appropriate water supply, excreta disposal, solid waste management, drainage, use of chemical controls, etc. (Strategia Netherlands, 2018, p. 4). The fifth main standard is Solid Waste Management. According to the 2018 edition of the Sphere Handbook, Solid Waste Management can be defined as “the process of handling and disposing of organic and inorganic solid waste” which involves planning solid Waste Management systems; handling, separating, storing, sorting and processing waste at source; transferring to a collection point; transporting and final disposal, reuse, re­purposing or recycling ("The Sphere Handbook", 2018, p. 126). As previously stated, this standard is strongly linked to the Vector Control standard as inappropriate disposal of organic waste increases the risk of disease-bearing vectors breeding (rats, flies, mosquitoes, etc.), increases the risk of water contamination (e.g. surface water pollution, etc.) and creates a depressing and ugly environment which could discourage community efforts to improve other aspects of environmental health (open defecation, etc.) (Strategia Netherlands, 2018, p. 5). The sixth main and last main standard is Drainage which refers to the necessity of producing and environment that minimises the health risks which may come as a result of water related vectors (water erosion, standing water, storm water, floodwater, domestic and medical facility wastewater); this can be achieved through adequate site planning and waste water disposal (using small-scale, on-site drainage) ("The Sphere Handbook", 2005, p. 86).

1. **Waste Management is becoming one problem in the emergencies. Why ?**

As stated by the World Health Organisation and following the Solid Waste Management Sphere standard, individuals should be able and have the means to dispose of their domestic waste conveniently/effectively and live in a safe environment free from solid waste contamination (Wisner & Adams, 2002, \*preface p. XVII). Regrettably, according to the World Health Organisation (WHO), economic growth/production at any cost combined with high rates of population growth in certain parts of the world (mostly developing countries) have increased the pressure on urban and rural livelihood systems already weakened by the negative spiral of increasing poverty, declining living standards and decreasing environmental quality. In fact, as stated by the food and Agriculture Organization of the United Nations: since the early 1950s, plastic production has increased exponentially to reach a staggering 332 million tons in 2015 and it is expected that it doubles by 2025(Lusher, Hollman & Mendoza-Hill, 2017, \*introduction p. IV). Unfortunately, the already problematic aspect of Worldwide Waste Management tends to be accentuated in developing countries and more particularly in crisis contexts due to the nature of the emergency itself (causing extra although potentially different types of waste) and the fact that pre-existing collection and disposal systems (if there were) often get disrupted(Rouse & Reed, 2013, p. 1). Furthermore, in most developing countries, treatment, disposal technology access and knowledge are often scarce (or not considered a priority) leading to inappropriate siting, design, operation, or maintenance of dumps and landfills, open/uncontrolled dumping (general wastes: organics and recyclables – and special wastes : household hazardous, medical, and industrial waste – supposed to be co-disposed) and incomplete collection/recovery of wastes(Garfì & Bonoli, p. 1). As previously stated in the standards, a certain number of problems tend to be linked to the inadequate fulfilling of solid waste management requirements. Rotting organic materials represents a very serious public health risk as they constitute an ideal breeding ground for various communicable-disease vectors (e.g. mosquitoes: malaria, dengue, yellow fever; flies: faecal-matter related diseases; rats: leptospirosis, etc.) (Perrin & Grenzeback, 1996, p. 108), are strongly correlated with ground/surface water contamination (e.g. non-specific diarrhoeal diseases, cholera, etc.) and are often linked to the creation greenhouse gas emissions/other air pollutants (known to cause acute respiratory infections, etc.)(Perrin & Grenzeback, 1996, p. 124). Emergency settings are therefore often prone to being confronted to several factors which are directly linked to increased risks of disease transmission (and potential epidemics) as for example overcrowding (high concentration of individuals needing for assistance in restricted space presents an obvious risk of epidemic) and the general deterioration of hygienic conditions (Perrin & Grenzeback, 1996, p. 127). Lastly, one should observe this non-exhaustive list of constrains in order to understand the challenges faced by developing countries and agencies working in waste management: the human technical factors (Few or nonexistent human resources for waste management, absence of protection gear for these individuals, general lack of technical waste management training of officials, etc.), the financial factor (low-priority items in government budget allocations, outsourcing contracted services to deal with waste – wide disparity in financial capacity of users leads to poor success), economic factors (technology use that is inadequate technically, economically and socially; poor access to machinery access, maintenance incapacity, low utilisation rate, etc.), social factor (absence/poor private sector base to compliment -the sometimes non-existent- public sector service, poor interaction between population and administrative authorities, waste pickers -directly liked to unemployment and extreme poverty-, etc.)("Characteristics of Solid Waste Problems in Developing Countries", p. 14).

1. **Discuss how environmental health and sanitation affect the nutritional status of vulnerable groups.**

For obvious reasons that have been extensively, demonstrated above (questions 1, 2, 3), the nutritional status of vulnerable individuals (e.g. general population, children, pregnant women, the elderly, HIV infected, etc.) is intimately linked to the joint work between communities and agencies (NGOs, International Humanitarian and Development Organizations) to maintain a high enough level of environmental health and sanitation. In order to correctly address this question, it is crucial to primarily define what environmental health and nutritional needs are. According to the National Environmental Health Association (NEHA), environmental health is to be defined as the “science and practice of preventing human injury and illness and promoting well-being by identifying and evaluating environmental sources and hazardous agents and limiting exposures to hazardous physical, chemical, and biological agents in air, water, soil, food, and other environmental media or settings that may adversely affect human health.” (World Vision, 2017) As for nutritional needs, it can be defined as the average quantity of nutrients needed daily per individuals (taking into account: the physiological condition, sex, weight, age, environment, physical activity, etc.) to remain in good physical and mental health (Perrin & Grenzeback, 1996, p. 25). Inadequate environmental health/sanitation is undoubtedly, one of the most detrimental factors which may affect the general health and nutritional status of populations in developing countries; this statement becomes even clearer when observed through the scope of an emergency. In order to fully understand the mentioned scope, one take into account the relation between the given population and its environment; developing countries often suffers from several issues (to name a few: great distance/lack of access to water -often of poor quality-; environments infested with communicable-disease vectors -poor waste management which in turn become breeding grounds for theses vectors/infect water sources-; impaired access to their usual resources to feed themselves, etc.) which highlight the necessity to master the environment(Perrin & Grenzeback, 1996, p. 77). Furthermore, poor environmental health and sanitation tend to have the regrettable effect of accentuating the often already high prevalence of diseases linked to the vicious cycle malnutrition-infection. For example, high concentrations of displaced persons or refugees are favorable grounds to the spread of faecal/respiratory/diarrhoeal/infectious diseases (linked to poor waste management, etc.) (Anglade, Bodin, Brinès, & Brunel, 2001, p. 23). Moreover, a healthy/well-balanced diet is essential for good health, but due to factors like the ones mentioned above (lack of food, contamination, poor access, etc.), their diets often do not contain an adequate nutritional balance (Protein, Carbohydrates, Vitamins, Fats/Oils). This leads to undernourishment/malnourishment which makes those individuals less resistant to infections and therefore more prone to illness (Strategia Netherlands, 2018, p. 1). This obviously leads to dreadful effects for the vulnerable groups which include for example children, pregnant women, the elderly, HIV infected, etc. (e.g. 50% of all malnutrition cases are either associated with repeated diarrhoea or intestinal worm infections as a direct result of inadequate water, sanitation; hygiene and diarrhoea is the second-leading cause of death globally in children under five years)(World Vision, 2017).

1. **Ass****uming you have been appointed to head an organisation dealing with health development in your area, describe the critical factors that you will consider in planning for health service in that area.**

If I was to be appointed to head an organisation dealing with health development in an area (I do hope it will be the case one day). I would put in place a certain number of initiatives (which will be declined further on) in order to insure health services that are in adequation with the population’s need. Furthermore I would also concentrate on the “DO NO HARM” (UKAID, 2019) humanitarian principal (in every sense of the term: respect of cultural distance, ethical help, blocking dependency vicious cycles, etc.) which I mentioned in my last paper as I consider it a pillar of any adequate efficient, beneficiary-oriented, optimised intervention and a responsibility as engaged humanitarian helpers. First and foremost, as stated by the Strategia Netherland’s Manual: “Community participation is the basis of successful health promotion”(Strategia Netherlands, 2018, p. 8). This statement should be applied to any type of action oriented towards the population in order to promote sustainable development. Furthermore, the idea of sustainable development cannot be achieved without health promotion, which is, as defined by the Ottawa Charter through Strategia Netherland’s Manual: “The process of enabling people to increase control over, and improve, their health.”(Strategia Netherlands, 2018, p. 8). Moreover, as stated in the practical guide in health promotion through the ecological approach (traduced here): “the principal criteria which should be used when analysing whether or not an initiative is aimed at Health Promotion is the degree to which it engages itself in the process of community empowerment or community capacity building” (Renaud & Lafontaine, 2011, p. 8). These three statements would therefore be the core of any actions/health development/health service I would develop on the field. As for the health planning service I would implement in my area, they would be a combined approach between the six “Minimum standards in WASH interventions” (Hygiene Promotion, Water Supply, Vector Control, Excreta Management and drainage) and the “Food Security and Nutrition” standards which are thoroughly detailed in the 2018 Sphere Handbook ("The Sphere Handbook", 2018, p. 90 - 158). Furthermore, since my goal is to plan a health service (through the combination of these standards), I would start with an initial need assessment which serves the intention of understanding the imbalance between the population’s need (victim status: health, nutrition, employment, etc.) and the local resources in place (agriculture, market, health services, etc.) in order to decide (with the community) of the priorities for my action (Perrin & Grenzeback, 1996, p. 77). Afterwards, based on a thorough analysis of the health issues, I would attempt on controlling the problem with the help of community influencers (teachers, leaders – with a particular accent on gender equality in the process) in order to facilitate the understanding and transmission of my health messagesand help people become less vulnerable to the emergency/disaster (Strategia Netherlands, 2018, p. 8). A priority would therefore be given to ensuring individuals are fully informed and involved (combined action of the population and my NGO/agency) in putting in place methods to insure vector control/environments free from contaminants (solid waste/excreta management, drainage -stagnant water, etc.- and other particular methods detailed “Minimum standards in WASH interventions”) (Perrin & Grenzeback, 1996, p. 77) through health education (communication of information which enables people to make informed decisions about health-related activities at all stage of the disaster-management cycle) and hygiene education (communication on the particular areas of health related to: water supply, sanitation, vector-born diseases control and hygiene practices: e.g. Handwashing, etc.)(Strategia Netherlands, 2018, p. 8). It goes without saying that attaining these objectives will necessitate access to safe drinking water for the population (faecal/other contaminants-free sources -e.g. use of chlorine-, etc.) and appropriate sanitation facilities (no open defecation due to health risks/source contamination, faeco-oral related disease reduction, etc.)("The Sphere Handbook", 2018, p. 92). As for the nutritional aspect of my response (individuals are likely to be prone to illnesses if not correctly addressed -malnourishment/undernutrition-) and with the gathered information of the initial need assessment, I would try, with the help of my health workers and agricultural extension workers, to ensure an adequate nutritional balance (protein, carbohydrates, fats) for individuals in need (doing the best with the accessible; reorientation of agricultural/gardening practices) (Strategia Netherlands, 2018, p. 1).

**Conclusion:**

In conclusion, while still focusing on Water, Hygiene and Sanitation (WASH) aspects of disaster response, this assignment puts an accent the particular scope of WASH in emergency contexts. Due to the highly stressful settings which result from emergencies, WASH in disaster response emphasises the importance of attaining, to the maximum of an NGO/OI/Agency’s capacity, the “Minimum Standards in Water Supply and Sanitation” (Hygiene Promotion, Water Supply, Vector Control, Excreta Management, drainage) and their respective sub-standards ("The Sphere Handbook", 2018, p. 90) through an environmental approach (promoting environments free from contaminants as this particular issue is directly linked to the success of emergency interventions). These standards therefore represent optimal guidelines reflecting the minimum standards which are to be prioritised (with the help of the populations going through the emergency) in order to ensure access to essential human needs, restore life with dignity, comfort and security through the promotion of adequate hygiene practices and the reduction of environmental health risks. Furthermore, this assignment also focuses on the determinant factors to ensure optimal outcomes in emergency contexts which should come as a result of adequate support, stressing the need to align our intervention with the population’s needs, promoting the community’s participation by means of serving the greater Health Promotion purpose of community empowerment and community capacity building through strategies aimed at decreasing their dependency and promoting sustainable development (“DO NO HARM”) (Renaud & Lafontaine, 2011, p. 8).

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