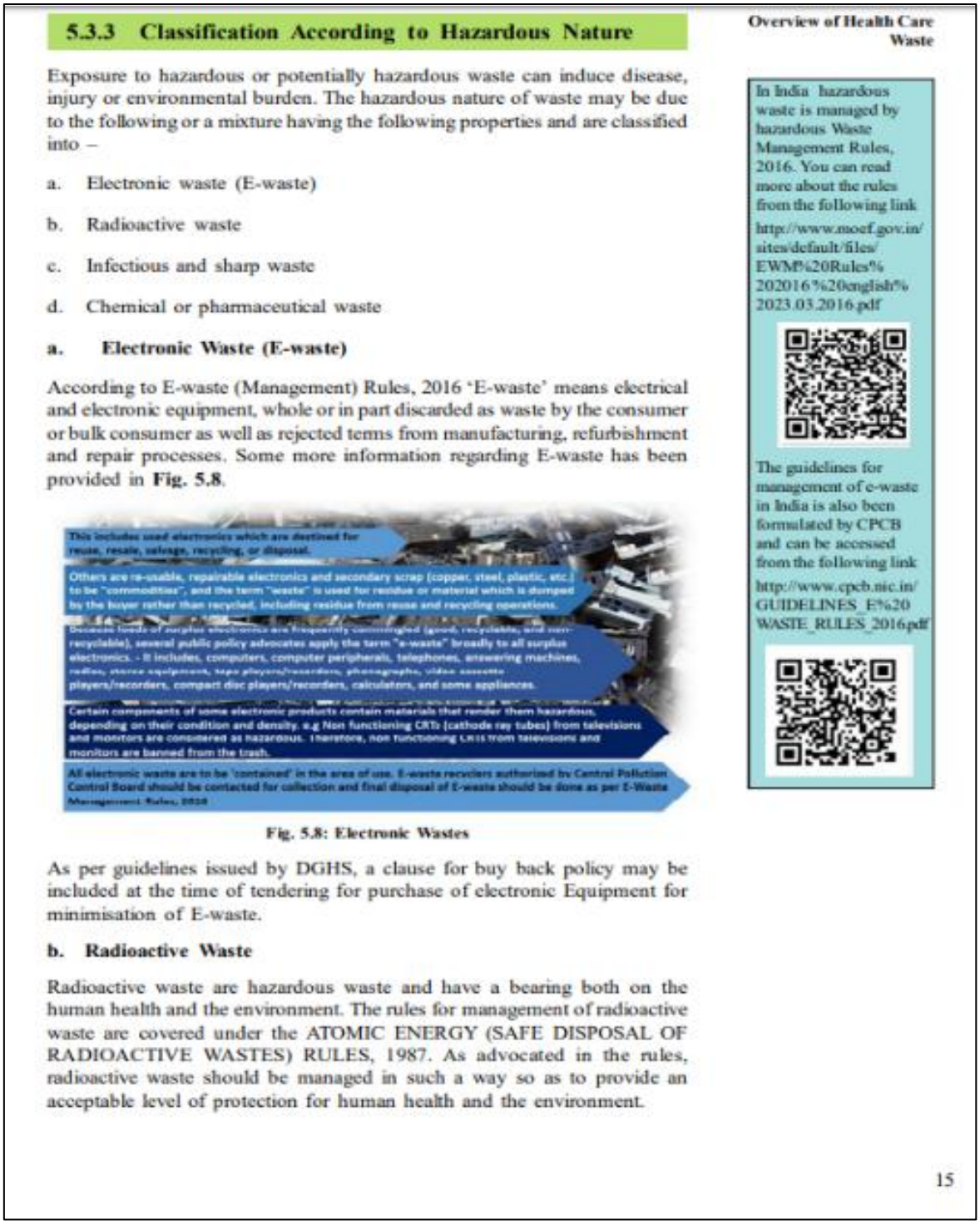
Augmented Reality in the Form of QR Code Developed for the CHCWM

With the advancement in Mobile Technologies we observe that Augmented Reality (AR) and Mobile Augmented Reality have made a great progress. For example, smart phone with camera, processors and sensors is accessible to people easily. In our context, in the Self Learning material (SLM) of the CHCWM programme of SOHS, IGNOU, QR codes were embedded for all the components where virtual information was required to integrate with the information available in the SLM.



5.3.3 Classification According to Hazardous Nature

Overview of Health Care Waste

Exposure to hazardous or potentially hazardous waste can induce disease, injury or environmental burden. The hazardous nature of waste may be due to the following or a mixture having the following properties and are classified into –

a. Electronic waste (E-waste)

b. Radioactive waste

c. Infectious and sharp waste

d. Chemical or pharmaceutical waste

a. Electronic Waste (E-waste)

According to E-waste (Management) Rules, 2016 'E-waste' means electrical and electronic equipment, whole or in part discarded as waste by the consumer or bulk consumer as well as rejected terms from manufacturing, refurbishment and repair processes. Some more information regarding E-waste has been provided in **Fig. 5.8**.

Fig. 5.8: Electronic Wastes

In India hazardous waste is managed by hazardous Waste Management Rules, 2016. You can read more about the rules from the following link http://www.moef.gov.in/sites/default/files/EWM%20Rules%202016%20english%2023.03.2016.pdf

The guidelines for management of e-waste in India is also been formulated by CPCB and can be accessed from the following link http://www.cpcb.nic.in/GUIDELINES_E%20WASTE_RULES_2016.pdf

As per guidelines issued by DGHS, a clause for buy back policy may be included at the time of tendering for purchase of electronic Equipment for minimisation of E-waste.

b. Radioactive Waste

Radioactive waste are hazardous waste and have a bearing both on the human health and the environment. The rules for management of radioactive waste are covered under the ATOMIC ENERGY (SAFE DISPOSAL OF RADIOACTIVE WASTES) RULES, 1987. As advocated in the rules, radioactive waste should be managed in such a way so as to provide an acceptable level of protection for human health and the environment.

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1.7.2 Sources of Environmental Hazards

The sources of environmental hazards can be classified depending upon where they are present e.g., water, air, soil etc. **Fig 1.4** shows some of the sources of environmental hazards. You will read more about these sources in Units 3 and 4 of this Block.

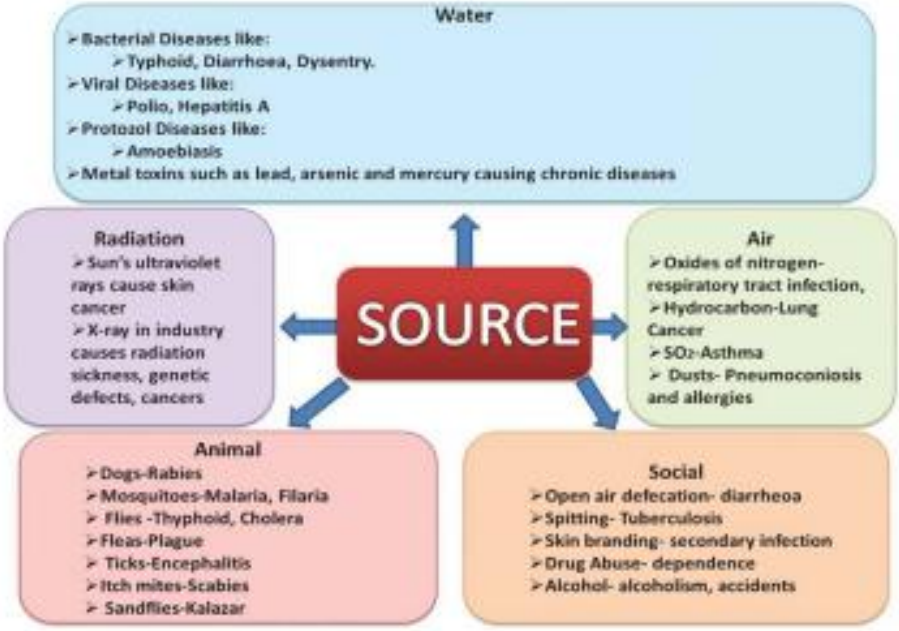

Fig. 1.4: Sources of environmental hazards

1.7.3 Effect of Environmental Hazards on Health

The effects that hazards have on the health are both direct and indirect. The direct effects are generally specific and can be easily observable or measurable. On the other hand indirect effects are long-term and cannot be easily quantified.

The amount of impact that a hazard will have on the health depends upon the dose of the insult, the frequency of administration or contract, nature and duration of application, nutritional status and the pre-existing illness.

1.7.4 Prevention and Control of Environmental Hazards

Prevention usually implies to strategies, which are applied before the exposure to the hazard and the actions are usually applied on health individuals to eliminate their risk of exposure.

Control measures are usually employed after the exposure to the hazard. Action is usually taken at the individual level and aims at isolating and treating the affected people.

Check Your Progress 4

1) Explain how environmental hazards affect health.

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Watch the following video to know more about effect of climate change on health.

https://www.youtube.com/watch?v=Z5gtjhWJ-3M

Think and reflect

The global organisations take a lead and release standards and guidelines for health care waste management. Do you think it helps and is advantageous for the countries to utilise this information? How?

Other documents of the WHO can be accessed from the following links.

Injection safety- http://www.who.int/injection_safety/en/

Patient safety- http://www.who.int/patientsafety/en/

http://www.iswa.org/iswa/organisation/about-iswa/

https://www.unep.org/gpwm/Home/tabid/79392/Default.aspx

The organisational set up at the global level has been described in **Fig. 8.2**.

Fig. 8.2: Responsibilities of handling health care waste at global level

Some of these global players include-

i. World Health Organisation (WHO)

This is one of the foremost organisations dealing with appropriate management of health care waste at the global level. The WHO contributes in many ways –

i. By laying down rules/guidelines/standards

ii. by releasing training materials

iii. providing inputs on planning

iv. organising and implementing health care waste management policies. Realising the importance of injection safety and patient safety both of which are integral to health care waste management, WHO set up separate secretariats to address both these issues. In its 2014 edition on Safe management of wastes from health-care actitives, it gives the guidelines for managing the different kinds of health care waste.

ii. United Nations Environment Programme (UNEP)

Many international environmental laws made under the aegis of UNEP are directly or indirectly concerned with sound management of health care waste. An example is the **Stockholm Convention** which aims at reducing the releases of Persistent Organic Pollutants (POP). Dioxins and furans which are released during incineration of medical waste have been one of the major focal areas in implementation of this convention. Similarly, other Conventions like Basel Convention on Control of Transboundary Movement of waste stresses on management of clinical waste as near the source of generation as possible. **Minamata convention** on mercury pollution prevention aims at a global phase out of mercury measuring instruments and dental amalgams in a phased manner. You will read in detail about these conventions in the Unit 26 Block 3 BHM-102.

iii. The Global Environment Facility (GEF)

This Fund was established on the eve of the 1992 Rio Earth Summit, to help tackle our planet's most pressing environmental problems. GEF funding to support the projects is contributed by donor countries. Various UN agencies like United Nations Industrial Development Organisation (UNIDO), United Nations Development Programme (UNDP) are implementing the GEF funded projects which aim to improve compliance of medical waste management globally. You will read more about these conventions in Unit 26, Block 3, BHM-102.

Coordinators and Innovators

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