

## Guidance note – Environment and Health, RMRP 2022<sup>1</sup>

*This guidance note has been adapted for the RMRP 2022. Guidance is limited to the context of the region and this emergency. The note is not intended to cover all health interventions or all health emergencies anywhere in the world. Where health interventions overlap with those of other sectors (e.g. WASH), guidance for those sectors should also be reviewed.*

The environment is related to health through being a causative factor for humanitarian health needs, as well as an affected factor from the health sector response or other health care situations. The environmental impacts can be mitigated with well-designed health response. The health sector response can also be an entry point for low-cost and simple ways to improve environmental management and vice-versa, the improvement of environmental management can also be an entry point for low cost health prevention/promotion.

It is important to consider the ways in which environment is related to the sector:

- How environmental situations affect humanitarian needs related to health (environmental determinants of health);
- How the activities of the health sector can generate environmental impacts if not carefully designed;
- How the health sector can generate environmental benefits and enhancements through activities that the sector would generally develop anyway, and how these benefits can also contribute to sustainable development and integration;
- The health sector may also be able to detect environmental situations affecting health which are of interest to other sectors (e.g. chemical contamination, energy, protection) and provide surveillance information to those sectors to develop appropriate interventions. For example, a high number of women being admitted with respiratory problems may be an indicator of high levels of wood fuel burning, which is likely to mean high levels of deforestation, foraging for wood fuel and potential exposure to protection risks such as violence or snake bites. Including analysis of trends and environmental factors in health surveillance and ensuring intersector coordination to facilitate response by others can be an important part of the health response to the environmental dimensions of emergencies.

**Assessment:** Consider existing environmental health factors as well as social and environmental determinants of health in your assessment. Seasonal factors such as thermal extremes, dry/rainy and wildfire seasons as well as recurring epidemics (e.g. Dengue, gastroenteritis, malnutrition) are important during migration and even more so during a pandemic, since they have a major impact on underlying health conditions and on the capacity of responding health services. Adaptation to seasonal factors over time can be built into project implementation plans, with dedicated activities during relevant seasons, to reduce population vulnerability. Patterns in health cases can be reduced through environment-related interventions where related environmental factors.

Capacity assessments should consider to what degree environment is addressed in sector training materials and emergency plans, both the environmental determinants of health but also the environmental impacts of the health sector. They should also consider to what degree healthcare

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<sup>1</sup> <https://ehaconnect.org/clusters/health/>

waste management is addressed by the health sector, from waste generation right through to final treatment and disposal, and any training and systems changes required.

**Social and environmental determinants of health<sup>2,3</sup>:** Environmental factors can increase vulnerability to health problems, with particular impacts on children, pregnant women, the elderly and those with co-morbidities. Many of these issues can be addressed through health surveillance and appropriate coordination, ensuring a mechanism to feed trends through to other sectors that may be able to develop strategies to reduce the prevalence of these situations. However, those sectors will likely rely on the health sector for detection and data.

Dimension	Detail	Environment and health response strategy
Air	Lack of resources for and access to clean fuel results in the gathering of biomass and the cutting of trees to use as free fuel and the exposure of women and children to smoke, increasing respiratory problems. During assessments in Villa del Rosario in 2019, most health actors noted the high levels of respiratory problems amongst Venezuelan women and children. Temporary shelters and other emergency response facilities implemented without proper infrastructure, such as paved roads, and the lack of vegetation, exacerbates respiratory illnesses caused by dust during dry seasons. An additional issue in air quality results from wildfires, often the result of thermal extremes.	Map health problems related to air pollution and address through coordination with other sectors (e.g. shelter, for energy / fuel issues). Mitigation options for episodes of seasonal air pollution during the COVID-19 pandemic may need to be considered along major migration routes. Consider provision of adequate masks for walkers, not only for COVID-19 but also air pollution, and guidance on appropriate disposal. The NFI sector may require guidance to include these in kits on a seasonal basis.
Water	Although water provision is addressed by the WASH sector, leadership on ensuring water quality can vary between countries, sometimes being WASH and sometimes falling under health. However, it is important to consider prevalent water contaminants, especially where these relate to environmental issues such as illicit economies (illicit crops, artisanal mining, logging), slash-and-burn agriculture, stagnant water resulting from poor waste management or mining (increases the risk of mosquito-borne disease). Poisoning with heavy metals due to artisanal mining has developmental impacts on children and impact of chemicals due to improper fumigation can cause severe	Mapping of industrial activity, agriculture, illicit environmental economies and similar can help to identify water quality issues to assess beyond the standard WASH issues related to biological contamination, turbidity/sediments and coliforms. Advise WASH actors on relevant tests and any other actors depending on health issues from exposure (e.g. if contaminants might affect sexual and reproductive health, UNFPA; if related to agriculture, FAO).

<sup>2</sup> <https://www.paho.org/en/topics/environmental-determinants-health>

<sup>3</sup> <https://www.who.int/phe/news/march2016/en/>

	diseases (including cancer). “Uncommon” humanitarian issues such as mining, heavy metals and chemical contamination are often missed by most sectors. Mosquito-borne disease can also be particularly severe for children, resulting in developmental complications due to microcephaly (Zika) or cerebral malaria. The dengue epidemic 2019 in the Americas had more than 3 million cases and 1,500 deaths. In 2020, the continues in certain countries (e.g. Peru, Brazil) in the midst of the coronavirus pandemic. These often arise from stagnant water and water storage, often used where piped water supply cannot be guaranteed 24/7.	Provide advice on the safe elimination or control of mosquitoes, stagnant water and other vectors without use of chemicals (may be to authorities, shelter or WASH sectors, depending on circumstances).
Soil / land	Environmental legacies and latent soil pollution can be a significant source of health problems for people living on the sort of marginal land which might be the only option available to refugees, migrants and local poor people. These areas are normally located in high risk areas prone to floods or landslides, meaning that these populations are exposed to multiple types of risk. Additionally, inappropriate agricultural practices increase the risk of landslides during heavy rainfall.	Local sources of information are likely to be able to advise on why local communities never settled (or never remained) in specific locations. This information may be useful for developing health sector contingency plans or health prevention / promotion campaigns for people with no alternative but to occupy those areas.
Ecosystems	People’s coping strategies may also pose environmental health risks. For example, the import of contraband meat, cheese and milk from Venezuela to Colombia is a common livelihoods strategy. However, these products have generally not passed any phytosanitary controls and the risk of diseases such as brucellosis <sup>4</sup> can be significant. Even without the import of contraband, which is only possible in the border areas, the risk of animal-human disease transmission through other informal livelihoods (e.g. deforestation forcing changes in ecosystems and microclimate) may exist, since livelihoods without regulation are likely to be the easiest for refugees and migrants to adopt.	Use health surveillance to detect any possible trends which might indicate zoonosis or other environmental health issues related to livelihoods associated with animals or ecosystems. Use intersector coordination to refer cases to relevant sectors (e.g. integration, food security).
Other pollution and	Chemical risks may arise from local industries to which refugees and migrants are exposed, or through involvement in illicit economies	Mapping of industrial activity, agriculture, illicit environmental economies and similar can help to

<sup>4</sup> [https://www.paho.org/panaftosa/index.php?option=com\\_content&view=article&id=184:brucellosis&Itemid=0](https://www.paho.org/panaftosa/index.php?option=com_content&view=article&id=184:brucellosis&Itemid=0)

chemical risks	such as illegal mining. Hazardous activities with chemical risks which may have a greater chance of involving refugees and migrants include mining, agriculture, textiles and certain heavy industries.	identify other chemical risks to people on the move. This information can be integrated into health sector contingency plans and health policy support.
Weather and climate	Refugees and migrants most exposed to the climate-related aspects of environmental determinants of health are likely to be “walkers” and people whose livelihoods generally rely on being outdoors. These may include hawkers, food vendors, recyclers, agricultural labourers, gardeners and others working in odd jobs. Of these, walkers are probably least able to predict and manage the impacts of the environment. Changing terrain, altitude and weather tend to lead to accumulation and then dumping of clothing and belongings on walking routes, resulting in waste accumulations and walkers exposed to the elements the next time they enter a low or cold area.	Collection and redistribution of clothing to walkers, along with information on environmental factors affecting health, would have a positive health impact by allowing them to anticipate these situations in their journey and be adequately prepared. Many of these initiatives are likely to be implemented by other sectors that will rely on health case surveillance data to know where the most critical areas are to intervene. Make use of intersector coordination to pass this data to other sectors.

**Environmental impacts of sector activities and possible mitigation strategies:**

Healthcare waste management<sup>5</sup> is a significant issue in both routine health service provision and humanitarian health response. While the law may mandate hospitals to receive the medical waste generated by international cooperation, if they have adequate health care waste management strategies, this may result in public health authorities going into debt trying to manage the increased volumes of waste. Where the law is less clear cut, this waste may not be appropriately disposed of, leading to possible contamination of water, land and air, and the food chain as well as the increased risk of infections from contact with the waste. Health working groups may wish to consider jointly contracting transport and final disposal services certified by the Ministry of Health, to control these risks and achieve economies of scale. Health assessments should consider how healthcare waste is managed through to treatment and final disposal and include visits to waste dumps / landfills or the final point of disposal of treated waste.

Sector activities	Possible environmental impacts	Mitigation strategies
Clinical attention and treatment (including vaccinations, COVID-19 response, clinical management of GBV.	Generation of healthcare waste including PPE used by aid workers at health facilities, inadequate treatment of healthcare waste and associated pollution. Exposure of waste management workers and dump	Contract private sector healthcare waste management companies (note that in some countries, previous healthcare waste management may not have been appropriate). Pay costs of local government management of healthcare waste generated by humanitarian actors according to a “polluter pays” principle, to avoid increasing public debt.

<sup>5</sup> [https://www.who.int/topics/medical\\_waste/en/](https://www.who.int/topics/medical_waste/en/)

		scavengers to inadequately treated healthcare waste.	
Construction of healthcare, isolation or quarantine facilities.	of	Increased construction waste, deforestation for construction materials, stagnant water	Sustainably sourced construction materials as a condition of tenders, regular removal of construction wastes, regular elimination of stagnant water and any food waste, installation of mosquito-repellent plants (e.g. limonsillo) to protect workers and patients, water and energy systems to reduce consumption. See the Smart Hospitals Toolkit for recommendations <sup>6</sup> .
Vector control		Overuse of vector control chemicals	Use natural products where possible, such as mosquito-repellent plants (e.g. limonsillo, lemon eucalyptus), integrated pest management <sup>7</sup> or apply best practice in the use of chemical vector controls <sup>8,9</sup> .

**Potential environmental benefits that could be generated by the health sector response:**

Health systems: Interventions in health can have environmental benefits in several ways. These may include health systems strengthening and raising the awareness and capacity of the health system to identify, monitor and address the environmental determinants of health of the migrant and refugee populations, for instance applying a community-based health care approach. This may be especially necessary at local level, where health authorities may have far lower technical capacity than at capital / national level. Traditional medicine and use of medical plants/natural medicine might be a low-cost alternative to be promoted as a complement or in regions where access to health services and medicines is limited. Facilitating relationships between environmental and health actors in these situations requires very little additional effort or resources.

Health infrastructure: One of the most common activities in upgrading health infrastructure is upgrading power systems to reduce power cuts. Renewable energy sources such as solar panels for electricity and wind turbines for water pumping could be considered. Water harvesting / recycling (re-use of grey water) can be integrated at low cost from the design stage, as well as architectural design features for natural temperature regulation based on the local climate (check also guidance notes on Shelter/Infrastructure and WASH). Improved healthcare waste management based on a plan from generation through to final treatment and disposal of waste would have a significant impact.

Health policy: While working to improve health policies, efforts can be made to integrate identification and monitoring of the environmental determinants of health relevant to the population of concern and host communities and identify short-term response measures as well as longer-term mitigation measures. Integrated or natural methodologies for pest management and vector control (e.g. fitting of mosquito netting to windows and doors in health facilities, community-

<sup>6</sup> [https://www.paho.org/disasters/index.php?option=com\\_content&view=article&id=1742:smart-hospitals-toolkit&Itemid=1248&lang=en](https://www.paho.org/disasters/index.php?option=com_content&view=article&id=1742:smart-hospitals-toolkit&Itemid=1248&lang=en)

<sup>7</sup> [https://www.usaid.gov/sites/default/files/documents/1860/SectorEnvironmentalGuidelines\\_IPM\\_2009.pdf](https://www.usaid.gov/sites/default/files/documents/1860/SectorEnvironmentalGuidelines_IPM_2009.pdf)

<sup>8</sup> <https://ehaconnect.org/wp-content/uploads/2019/05/Reducing-Environmental-Impacts-Of-Vector-Control-Chemicals-In-Emergencies-2019.pdf>

<sup>9</sup> [https://www.usaid.gov/sites/default/files/documents/1860/SectorEnvironmentalGuidelines\\_SaferPesticides\\_2003.pdf](https://www.usaid.gov/sites/default/files/documents/1860/SectorEnvironmentalGuidelines_SaferPesticides_2003.pdf)

based cleaning campaigns removing breeding grounds in the case of dengue, planting natural mosquito-repellent plants) can be promoted in order to minimise insecticide control methods, potentially harmful for the environment<sup>10</sup>. Health policy can also be strengthened through the consideration of approaches to manage healthcare waste during emergencies, using best available technology and developing minimum standards appropriate to the country emergency context<sup>11</sup>. An eventual transition to international standards should be envisaged<sup>12</sup>.

Provision of health information: Health information given in different geographic areas can be tailored to highlight the relevant local social and environmental determinants of health, to help refugees and migrants to take locally appropriate protection measures. Local intersector coordination can highlight locally specific risks to allow other sectors to take appropriate measures (e.g. in terms of NFIs provided and where those NFIs should be collected, adapted food and water rations for walkers, detection of smoke-related problems to allow for provision of alternative sources of energy or energy-specific vouchers, etc).

Health surveillance and health sector coordination: The health sector is likely to be the first to detect the public health impacts of environmental situations. These may include increased respiratory infections due to cooking on wood, suggesting deforestation, or vector-borne diseases due to poor waste management. Environmental Public Health issues should be a standard agenda point of intersector coordination. Build standing coordination mechanisms to involve the local ministry of health and ministry of environment regarding local environmental public health problems and any changes in the environmental health related epidemiological profile, and work with other relevant sectors to address these problems in their implementation.

Note that other situations may be detected by the health sector which have environmental implications. For example, in the response to cases of gender-based violence, health officials may become aware of environmental factors behind cases or patterns of GBV<sup>13</sup>, such as the use of GBV or sexual exploitation to gain access to or control of natural resources, or higher levels of GBV amongst people working in certain industries or locations, such as remote farms or forests. Health personnel may be able to advise other sectors of patterns, to allow for the development of energy, water or livelihood strategies which reduce GBV risks related to natural resource control or access. Patterns of mosquito-borne disease in communities or schools might suggest a need to plant locally accepted mosquito-repellent crops such as lemon eucalyptus. Environmental issues can be integrated into health sector contingency plans (examples noted above), both for the response by the health sector and through intersector coordination.

Healthcare worker training: In national-level training, aim to increase content addressing environmental public health epidemiology at national level, and local orientation training for health care personnel including environmental public health risks. Appropriate healthcare waste management should be included, noting that while healthcare workers engaged in curative health

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<sup>10</sup> Fumigation does not work in all stages of the mosquito life cycle. Although there are chemical control methods for those stages of the life cycle, those methods are also potentially harmful to the environment.

<sup>11</sup> WHO 2019 - Overview of technologies for the treatment of infectious and sharp waste from health care facilities: <https://apps.who.int/iris/bitstream/handle/10665/328146/9789241516228-eng.pdf>

WHO 2017 - Safe management of wastes from health-care activities: A summary <https://www.eecentre.org/wp-content/uploads/2020/05/Summary-Safe-management-of-waste-from-health-care-setting-2017-eng-2.pdf>

WHO 2018 – Healthcare waste factsheet: <https://www.who.int/news-room/fact-sheets/detail/health-care-waste>

<sup>12</sup> <https://www.eecentre.org/wp-content/uploads/2020/05/UNEP-CHW-PUB-Factsheets-Healthcare-MedicalWaste-2020.English.pdf>

<sup>13</sup> <https://portals.iucn.org/library/node/48969>

services may generate healthcare waste, administrators should also be trained to ensure that the entire chain of custody of healthcare waste is understood and that the health centre takes responsibility for ensuring that waste is transferred to an authority able to correctly treat and dispose of that waste. Training should also address relevant aspects of environment and health surveillance and coordination (see above), since many of these aspects depend on instinct, documentation, analysis, reporting and a clear understanding of the relationship between environment, health and other sectors.

**From whom can you receive support?**

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