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Health, environment and climate change

Draft WHO global strategy on health, environment and climate change: the transformation needed to improve lives and well-being sustainably through healthy environments

Report by the Director-General

1. In decision EB142(5) (2018), the Executive Board at its 142nd session requested the Director-General inter alia to develop a draft comprehensive global strategy on health, environment and climate change, to be considered by the Seventy-second World Health Assembly in May 2019, through the Executive Board at its 144th session in January 2019. The Secretariat drafted a global strategy, which, in accordance with decision WHA65(9) (2012), was submitted to WHO's regional committees. Through this process, Member States have commented on and provided inputs to the draft strategy, which have been reflected in the present document.[1]

SCOPE

2. This draft strategy aims to provide a vision and way forward on how the world and its health community need to respond to environmental health risks and challenges until 2030, and to ensure safe, enabling and equitable environments for health by transforming our way of living, working, producing, consuming and governing.

3. Environmental risks to health, in the framework of this strategy, are defined as all the physical, chemical, biological and work-related factors external to a person, and all related behaviours, but excluding those natural environments that cannot reasonably be modified. It focuses especially on the part of the environment that can reasonably be modified.

THE CHALLENGE

4. The current situation and the challenges ahead call for a transformation in the way we manage our environment with respect to health and well-being. Current approaches have laid the foundations, but they have not proven sufficient in sustainably and efficiently reducing environmental risks to health

[1] In line with resolution WHA69.19 (2016) on the global strategy on human resources for health: workforce 2030, a health workforce impact assessment was carried out for the draft WHO global strategy on health, environment and climate change (see https://www.who.int/hrh/documents/B144_HRH-links_160119-climate.pdf, accessed 16 January 2019).

and building health-supportive and enabling environments – hence the call for a new strategy on health, environment and climate change.

5. Known avoidable environmental risks cause about one quarter of all deaths and disease burden worldwide, amounting to at least a steady 13 million deaths each year. A healthy environment is vital for human health and development. Air pollution – one of the largest risks to health – alone causes seven million preventable deaths per year, with more than 90% of people breathing polluted air and almost 3000 million people still depending on polluting fuels such as solid fuels or kerosene for lighting, cooking and heating. More than half the world's population is still exposed to unsafely managed water, inadequate sanitation and poor hygiene, resulting in more than 800 000 preventable deaths each year. A large fraction of malaria cases and other vector-borne diseases is closely linked to the management and manipulation of the environment, such as drainage, irrigation schemes, or design of dams. More than one million workers die each year because their workplace is unsafe, and more than one million people die from exposure to chemicals.

6. Climate change increasingly affects people's health and well-being, as do other global environmental changes such as loss of biodiversity. It is increasing the occurrence of heat waves, droughts, extreme rainfall and severe cyclones in many areas, and modifying the transmission of food-borne, water-borne and zoonotic infectious diseases, resulting in large impacts on health. Populations in vulnerable situations, including those living on small islands and in the least developed countries and regions, are at higher risk. Wider-ranging potential consequences include water scarcity, forced migration and increased political tensions within and between countries. This is part of a wider pattern of global environmental change, for example the rapid loss of biodiversity and ecosystem stability, which undermine food and water security, protection from extreme weather, and the discovery of new medicines.

7. Despite substantive efforts to reduce environmental risks to health, traditional risks persist, which challenge health equity. Important advances have been made to protect people from known environmental risks by setting norms and guidelines, implementing solutions, including regulatory action, and monitoring efforts. They provide the basis for environmental health protection and need to be scaled up. Nonetheless, uneven development has left behind large parts of the global population, who still lack access to basic environmental services, such as sanitation. Moreover, there are gaps in institutional capacities for health protection through legislation, management of chemical and other hazards, and emergency response. The effects of human actions on the environment also raise ethical and human rights issues, as they will be felt by future generations and will continue to disproportionally affect populations in situations of vulnerability, across gender, age, ethnic and socioeconomic groups who have often contributed least to environmental changes.

8. New environmental, climatic and health issues are emerging and require rapid identification and response. Recent examples include the management of electronic waste, nanoparticles, microplastics and endocrine-disrupting chemicals. The world is changing rapidly, with an increased pace of technological development, new organization of work, increased migration, climate change and increasing water scarcity; it needs to be able to identify and respond to such changes and emerging issues in a timely manner.

9. Stakeholders, health authorities and communities should be more active in shaping the energy transition, guiding urbanization and ameliorating other major development trends, so as to protect and promote health. Large-scale changes that societies are continuing to experience include: increasing demand for energy and transport; technological innovation, expanding the range of options to meet such demands; urbanization, with more than half the world's population now living in cities (the proportion will increase to more than 70% by 2050); and increased mobility of people, goods and services. Health

is rarely central to decisions affecting these trends, resulting in missed opportunities for health protection and promotion. Poorly planned and managed urban settings with unsustainable transport systems and a lack of access to public and green areas increase air pollution and heat islands, reduce opportunities for physical activity and access to decent jobs and education, and have a negative impact on community life and people's mental health. Because of the close relation between air pollution and climate change, failure to tackle air pollution and to mitigate climate change together result in a lost opportunity to gain the health, economic and environmental co-benefits that would derive from more efficient transport and energy systems, a decarbonized economy, and healthier food systems with less impact on the environment. New approaches are needed that consider the consequences of actions in their entirety, taking a longer-term and equity perspective.

10. The sustainability of health systems is put at risk if the root[1] causes of disease are not seriously tackled. About 10% of global gross domestic product is being spent on health care, but very little goes to prevention.[2] The recurrent and high rates of diarrhoeal diseases, respiratory infections and particularly noncommunicable diseases caused by the environment weigh heavily on health services and national household budgets. Financial and human resources allocated to health promotion and primary prevention remain inadequate to reduce the substantial burden of disease caused by environmental risks to health. Failure to reflect costs of all consequences of policies, technologies and products in pricing structures will merely continue to transfer costs to the health sector and to citizens.

11. Approaches that focus on treatment of individual diseases rather than improvement of determinants of health will be insufficient to tackle modern environmental health challenges. Single-determinant approaches are unlikely to achieve expected improvements in health equity and well-being, given the complex interaction of factors at the level of borders between countries, society and the individual. Approaches that are more integrated are required to address the root causes of disease, which are often defined by policies in key sectors other than health. Failing to address the root causes of disease and over-reliance on medicines and insecticides are even leading to increasing problems such as antimicrobial and insecticide resistance, with potentially substantial implications for public health.

12. Knowledge gaps continue to prevent efficient implementation of health-protective strategies, and more evidence-based and efficient communication is needed. Evidence is still incomplete or lacking on certain risks to health, such as on climate change, electronic waste, nanoparticles, and numerous chemicals or their mixtures. The impact on health of employment conditions and work-related risks, such as sedentary work, long working hours and labour migration, needs to be better assessed. Equally, more evidence is needed on efficient solutions and strategies and their financial costs, as well as on their effective implementation. Increasingly, such evidence and public health information is communicated through new platforms: these need to be used to their full potential.

13. Current governance mechanisms, including those at the local level, are failing to effectively deal with the cross-cutting nature of environmental health issues. As policies continue to be set without recognition of the impacts that they can have on health and health systems, partly because overarching governance mechanisms are not in place, their overall benefit will be inaccurately represented.

[1] In this context, root causes refer to policies or activities directly leading to increased environmental risks to health. Examples include choices in energy generation, agricultural practices, industrial production or business and land use planning leading to increased emissions, harmful exposures or greater vulnerability, fostering unhealthy behaviours, or accelerating climate change.

[2] Primary prevention aims to prevent disease or injury before it even occurs.

14. The 2030 Agenda for Sustainable Development calls for a new approach to health, environment and equity. By interlinking socioeconomic development with environmental protection, health and well-being, it provides overall support for tackling health determinants as relevant policies are being defined or key choices are being made, in a preventive and sustainable way, rather than repeatedly dealing with adverse impacts and inequalities. The commitment to tackling overuse of natural resources, large-scale waste production, and undue influence and vested interests going against public interests should allow more sustainable economic activities to be carried out and the creation of public goods for health.

15. Vision: a world in which sustainable development has eliminated the almost one quarter of disease burden caused by unhealthy environments, through health protection and promotion, preventive action in relevant sectors and healthy life choices, and which manages environmental risks to health. Key sectors fully integrate health into their decision-making process and maximize societal welfare.

STRATEGIC OBJECTIVES FOR THE TRANSFORMATION NEEDED

16. To address the challenges in health, environment and climate change, governments, society and individuals will all need to continue to rethink the way we live, work, produce, consume and govern. This transformation requires focusing action on upstream determinants of health, environment and determinants of climate change in an integrated and mainstreamed approach across all sectors, enabled and supported by adequate governance mechanisms and high-level political will. The health sector needs to play a new role to drive this transformation, using a sustainable and equitable approach.

Strategic objective 1. Primary prevention: to scale up action on health determinants for health protection and improvement in the 2030 Agenda for Sustainable Development

Effective and equitable action will be put in place on the drivers of environmental risks to health.

17. The 2030 Agenda for Sustainable Development calls for tackling environmental risks at their root, that is, through a shift towards primary preventive actions and the promotion of healthy choices. Reducing the 13 million deaths resulting from environmental risks each year requires efficient scale-up of primary preventive action involving all key stakeholders, across all sectors through the following.

(i) **Engagement for massively expanded primary prevention.** An expansion of primary prevention requires a substantial and sustained investment of resources towards addressing major risks to health, to create safe and healthy environments and improve people's lives today and in the future. Resources for intersectoral action can be funded by pricing, tax and subsidy reforms that reflect the true costs to society of products, technologies and policies.

(ii) **Integration of action on primary prevention in disease programmes.** Integration of preventive environmental health action into universal health coverage as a core component, for instance through strategies and programmes for specific diseases (noncommunicable and communicable) and risks (antimicrobial resistance, for example), is essential.

Strategic objective 2. Cross-sectoral action: to act on determinants of health in all policies and in all sectors

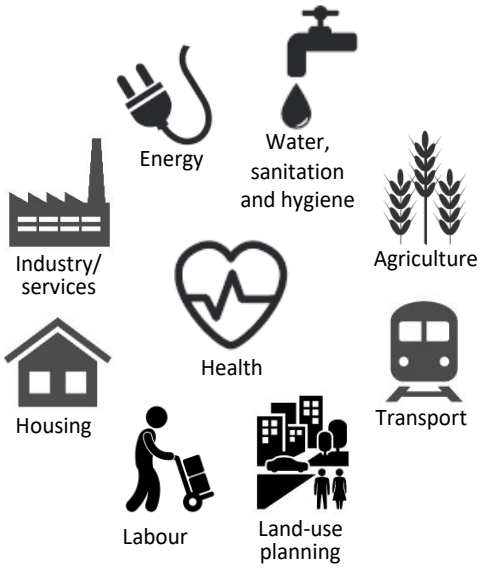
Policies across sectors will systematically consider health perspectives and evidence, and gain the health co-benefits of environmental protection. An example is ensuring healthy energy and transport transitions.

18. Responsibility for, and tools to tackle, many environmental determinants of health lie outside the direct control of individuals or the health sector alone (Fig. 1). Substantial transitions in energy, transport and other major systems are under way, which should lead to profound impacts on population health. Therefore, a wider societal, intersectoral, more holistic and population-based public health approach is needed. Examples of good practice are available, but such integrated approaches are not applied universally and are seldom directed to upstream environmental and social determinants of health.

(i) **Systematic consideration of health in the development of health-relevant policies beyond the health sector.** Decisions taken on the drivers of health risks should have the attainment and protection of good health as an explicit aim in key sectors such as energy, transport, housing, labour, industry, food systems and agriculture, water and sanitation, and urban planning. Such a Health in All Policies approach includes community engagement, coverage of health in environmental and labour regulations and safeguards, and assessment of the health impact of development projects and policies that tackle several environmental health issues in a single setting, community or system.

(ii) **Gaining the health co-benefits of more sustainable policy choices.** The harms and benefits to health of policy actions need to be comprehensively evaluated, alongside the financial and environmental implications. Much greater benefits for health could be achieved through seeking health co-benefits and taking health into account at the outset when defining policies.

Fig. 1. Key sectors (non-exhaustive) with relevance to health, environment and climate change



Strategic objective 3. Strengthened health sector: to strengthen health sector leadership, governance and coordination roles

The health sector will play leadership and coordination roles, working together with other sectors with relevance to health, environment and climate change to improve lives.

19. Incremental changes to deal with individual environmental risks are not sufficient. To address the environmental contribution to the global burden of disease, which is beginning to worsen after remaining almost static for a decade, the health sector needs to be equipped and strengthened to assume its obligations in shaping a healthy and sustainable future. Strengthened capacity of health ministries and other relevant parts of the health workforce is the key to: engaging other sectors of government through leadership, partnership, advocacy and mediation to achieve improved health outcomes; building their institutional capacity and skills to implement a Health in All Policies approach; and providing evidence on the determinants of health and inequity, and on effective responses. This approach would in turn avoid current or future economic costs, allowing reinvestment in health and sustainable development.

(i) **Developing the capacity of the health sector to engage in policies with other sectors.** Staff in the health sector need skills to engage in intersectoral dialogue and in the monitoring of investments and their consequences in other areas of the economy, as well as overall economic strategies and trade, and in the communication of the findings. Increased capacity and capabilities allow the promotion of mutually beneficial measures that simultaneously protect health and the environment. National health ministries – through leadership and intersectoral governance, evidence-based advocacy, operational programmes, and surveillance and monitoring – can drive progress in tackling environmental, social and climatic risks, to obtain short- and long-term benefits. Capacities for health sector policy engagement include related competencies for implementing a Health in All Policies approach. Capacity-building of relevant health workforces on health, environment and climate change is also important in connection with universal health coverage and health emergencies.

(ii) **Stepping up health sector efforts to reach out to other sectors for health protection.** Because of the wide scope of issues and the broad range of engaged actors, it is important for the health sector to provide guidance and establish regulatory frameworks on the assessment of health risks and impacts, on the implementation of appropriate solutions and on monitoring progress across sectors.

(iii) **Ensuring essential environmental services and healthy workplaces in health care facilities, and greening the health sector.** In low- and middle-income countries, it is necessary to address the major deficit in equipping health care facilities with safely managed water, sanitation and hygienic practices as well as reliable energy supplies, and ensuring their resilience to extreme weather events and other emergency situations. The health sector also needs to lead by example when it comes to procurement policies and services, waste management and energy-related choices in order to limit any negative impact on health, the environment and climate change.

Strategic objective 4. Building support: to build mechanisms for governance, and political and social support

Governance mechanisms and political support at high level will enable work across sectors and maintain public goods for health. Citizens' demands for healthier environments will shape policy choices. Multilateral and other high-level agreements will tackle major driving forces of risks to health and global threats to health.

20. Governance mechanisms, agreements and political will need to be based on more holistic approaches including interdepartmental and intersectoral cooperation that can achieve positive outcomes across all the affected sectors. This would lead to policy choices based on their overall impacts, including health impacts, on society. Currently, sectors are mainly driven by their sector-specific goals.

(i) **Strengthening of governance mechanisms to allow sustainable health-protective action.** Efficient and overarching governance mechanisms are required to facilitate cross-sectoral work and to take into account costs and benefits in a comprehensive way. More holistic approaches and the protection of public goods for health are required, in coordination with the health sector. As returns from environmental health action are rarely aligned with political timetables, it is important that such mechanisms can also accommodate environmental action with long-term health co-benefits and returns. Such mechanisms have a higher sustainability than repeated health care.

(ii) **Stepping up demand and leadership for health.** Broad engagement and action are required of the health sector, stakeholders from other sectors and the community to implement health-supportive policies, together with healthy design and management of environments. Health impacts from environmental risks are substantial: conventional health care systems alone cannot sustainably address them. Society is less and less willing to accept the avoidable health impacts. Health in All Policies and whole-of-government approaches are useful in this process.

(iii) **Building high-level political movements and agreements.** Long-term global efforts to address environmental risks to health have generated important evidence and tools. Evidence on solutions substantially to reduce the disease burden from unsafe environments has accrued: these notable successes are showing high returns on investments, such as benefits in terms of reduced air pollution and associated health gains from strategies to mitigate the effects of greenhouse gas emissions, or the 7:1 return from investing in water and sanitation. Recent high-level political forums, commitments, such as the Paris Agreement on climate change (2015), and alliances, in addition to the 2030 Agenda for Sustainable Development, are likely to support this change.

Strategic objective 5. Enhanced evidence and communication: to generate the evidence base on risks and solutions, and to efficiently communicate that information to guide choices and investments

Sufficient evidence-based information will be available in all critical areas to support choices in health-protective actions based on health impacts, economic implications of solutions, their effectiveness and co-benefits.

21. Enhanced cross-sectoral action, high-level support and scaled-up primary prevention will all require a solid and expanded evidence base on health impacts, costs, effectiveness and wider societal benefits of solutions, and will need to be informed by regular monitoring. Through expanded networks

and partners strengthened and intensified advocacy for, broad communication of and awareness raising about the health benefits from action on health, environment and climate change are essential in order to trigger and sustain action.

(i) **Integration of environmental monitoring and health surveillance in order to evaluate the health impacts from environmental risks and services.** Global and local trends of environmental quality indicators and health impacts will continue to provide evidence on how the environment is influencing human health and development, and to identify the areas where action matters most.

(ii) **Development of evidence-based guidance to support effective action at the national and subnational levels.** The health and other relevant sectors have the responsibility to inform policy-makers about health impacts and economic evaluation of interventions, including legal instruments, to tackle environmental root causes of disease. For example, more systematic reviews on cost-effectiveness of policies to address environmental health priorities would be central to decision-making. Interaction with implementers is necessary to optimize subsequent implementation. Targeted tools will need to be available for key stakeholders, to guide action for health.

(iii) **Interpretation and targeted communication of evidence.** Evidence-based public health information on evidence and trends, messages, advocacy initiatives and campaigns will aim to inform stakeholders at various levels, support policy decisions and trigger high-level political action and support. Making evidence-based information widely known among citizens, with the support of the health workforce, for instance on human exposure to chemicals in consumer products or on the health risks of air pollution to people living in polluted areas and potential solutions, creates awareness and demand for healthier environments. Citizens' demands should in turn trigger action from decision-makers. Health professionals have an important role to play in promoting behavioural change towards healthy and more sustainable ways of living.

(iv) **Mechanisms and capacity for early identification of and response to emerging threats to health.** Capacity must be built and mechanisms developed to deal with the rapidly emerging environmental health issues linked to new technologies, organization of work or global environmental changes. The extent and danger of some of these potential threats is uncertain; these include those relating to climate change, pharmaceuticals that persist in the environment, endocrine disruptors, microplastics, nanoparticles and electronic waste. Building capacity and developing mechanisms will require authoritative reviews of evidence and assessment of the effectiveness of control measures, as well as targeted environmental monitoring linked to public health surveillance. It also includes the adoption of more cross-sectoral solutions, such as protection of biodiversity and the linked surveillance of pathogens in wildlife and humans, in order to lower risk and increase preparedness for health threats resulting from human influence on natural ecosystems.

(v) **Shaping research and driving innovation.** Research is the foundation of strategic shifts, which will be necessary to accelerate attainment of the Sustainable Development Goals. To advance the 2030 Agenda, research needs must be identified and knowledge translated to fill critical knowledge gaps through the coordinated facilitation of research. Such research in environmental health has long been underfunded, particularly in comparison to biomedical research. Research connected to policies in health-relevant areas and in implementation science, relevant to all regions, will be of particular interest for improving health through safer and healthier environments.

(vi) **Building the case for adequate funding allocation and influencing investments.** Scaling up health-protective action for safer environments requires adequate funding and reorientation of investments. Funding allocation, and pricing structures and subsidies, should be guided by evidence-based assessments, for example of vulnerability and adaptation to climate change, taking into account all costs and all co-benefits. The full societal costs of inaction over short and long time-frames, and the implications of health-relevant policies in all sectors, need to be fully and systematically considered to prevent the hidden transfer of costs to the health sector and the undermining of environmental sustainability.

Strategic objective 6. Monitoring: to guide actions by monitoring progress towards the Sustainable Development Goals

Actions will be guided by monitored progress in the implementation of primary prevention through healthier and safer environments.

22. Monitoring will aim at closely tracking changes in determinants of health and their impacts, as well as their distribution across and within population groups. It will thereby provide information on the rate of progress in order to adjust policies, including those for environmental justice.

(i) **Monitoring of progress towards the Sustainable Development Goals and their and other indicators.** Countries, in cooperation with WHO and other relevant agencies where relevant, will continue to monitor progress towards the health-related Goals and other relevant indicators of health, environment and climate change, in order to deal comprehensively with the environmental root causes of disease. Strategic disaggregation of data will ensure the identification of health inequalities and their drivers. Strategic compilation of data, on social and environmental determinants to understand the drivers of health inequalities, will contribute to the development of policy coherence at all levels of government.

(ii) **Monitoring change and implementation of relevant strategies at the regional and country levels.** Relevant impact and outcome indicators need to be monitored to measure change at the country level in order to assess progress and guide policies.

IMPLEMENTATION PLATFORMS

Specific entry-points will be used to deliver scaled-up action on environmental root causes of disease using integrated approaches.

23. The response to the challenges of persistent and emerging health risks goes beyond the formal health sector. The response can only meet the scale of the challenges if it is led by the health community, participating in key strategies and planning, working with others to implement health-promoting multisectoral policies, in key sectors and settings. This response needs to be underpinned by public support and an enabling policy environment, informed and tracked with the best available evidence. A range of implementation mechanisms and platforms is required to achieve this vision. These are outlined below.

An empowered health sector

24. The formal health sector represents a significant and growing fraction of the global economy. It is one of the world's largest employers, with a unique position of trust and integration into communities. It is therefore ideally placed: to implement environmental health interventions at the community level

(either directly or in partnership with civil society organizations); to lead by example in demonstrating good practice in sustainability, by reducing the environmental impact of health care practice; and to act as leaders and advocates for health and sustainable development. This will require: a rebalancing of health sector expenditure towards primary prevention over the long term; additional funds that could originate from the removal of harmful subsidies and reconfiguration of taxes to reflect all the consequences of policies and reduce inequalities; a global reinvigoration and broadening of the discipline of environmental health to address the scale and complexity of modern environmental health challenges, including adequate training of health professionals; health sector leadership to promote a vision of health with a longer-term perspective that focuses on health determinants; and health professionals to promote behavioural change towards more sustainable and healthier ways of living.

Stronger national and subnational platforms for cross-sectoral policy-making

25. A few countries have formal institutional structures that provide direct policy guidance on health and environment challenges or that mandate intersectoral assessments of the health implications of decisions taken in other sectors. Such a Health in All Policies approach needs to have broader coverage, upstream policies that include strategic assessments rather than individual projects, and more direct influence on policy (for example, a legal rather than only advisory status). High-level regional forums have also been greatly contributing to advancing the health and environment agenda.

Key settings as sites for interventions

26. Key settings present opportunities to deal with environmental health risks and reduce health inequalities, while responding to demographic, social, economic, technological and lifestyle changes. The main settings and the objectives of interventions are set out below.

- **Households.** To ensure that shelter: is structurally sound; has adequate indoor temperatures; provides adequate water, sanitation and illumination and has sufficient space; is equipped with clean, affordable and reliable energy for cooking, heating and lighting, and ventilation; and protects from indoor contaminants, injury hazards, mould and pests.

- **Schools.** To ensure a safe environment for education; to use schools as centres to generate awareness about the linkages between health and environment and provide education on healthier and more sustainable approaches; and to facilitate the inclusion of best practices in the wider community.

- **Workplaces.** To ensure coverage of occupational health services that deal with the full range of physical, chemical, biological, psychosocial and ergonomic risks at the workplace; that contribute to prevention and control of modifiable risk factors, in particular for noncommunicable diseases; and that are adapted to the new forms of work, migration and organization of workplaces.

- **Health care facilities.** To ensure: provision and sustainable management of essential environmental health services, including access to clean and reliable energy and safe water, sanitation and hygiene practices; resilience to extreme weather events and the effects of climate change; and protection of health care workers and the wider community, through chemical safety, infection control and waste management.

- **Cities.** To meet the particular challenges of cities, namely, their concentration of environmental exposures to risks, including ambient air pollution, poor sanitation, wastes or occupational

risks, while making use of the opportunity presented by having a single authority under a city mayor who is empowered to take cross-sectoral decisions, for example on urban planning, supply of energy, water and sanitation, and waste management. Rapid urbanization presents a particular challenge. Strategic urban planning will be the key to creating health-supportive environments.

27. This list is not exhaustive: additional relevant settings may include agricultural development areas, concentrated economic zones, refugee camps including temporary shelters and shelters for migrants, markets, villages and small islands.

Partnerships for a social movement for healthier environments

28. An essential requirement for action is political will. This can only come about through broad societal awareness of the fundamental health threats posed by environmental risks and climate change, and their potential solutions. Individual advocates, health professional associations and civil society organizations are crucial for mobilizing public support for more sustainable and health-promoting development choices.

Multilateral environmental, health and development agreements

29. Most global environmental agreements (such as the United Nations Framework Convention on Climate Change and the Paris Agreement, the Convention on Biological Diversity, the Minamata Convention on Mercury) and regional environmental agreements (including the Convention on Long-range Transboundary Air Pollution) cite threats to health as a major concern. However, the mechanisms for implementing these agreements do not always adequately include consideration of these health threats or reflect health concerns, at national, regional or international levels. Stronger engagement of the health sector would promote synergies, minimize unintended negative consequences and optimize any necessary trade-offs between health, environmental and economic objectives. Similarly, ensuring that environmental risks are fully covered and action to counter them is supported in international health instruments, such as the International Health Regulations (2005), would particularly enhance and augment capacities to prevent, prepare for and respond to environmental emergencies. Such integration would advance the holistic approach articulated in the 2030 Agenda for Sustainable Development.

Platforms for the Sustainable Development Goals

30. The adoption of the 2030 Agenda has led to the creation of high-level political forums that are strengthening the means of implementation and follow-up on commitments made. Many of the Goals are entirely supportive of and in line with the actions to be taken to create a healthy environment. Such forums therefore constitute key platforms for triggering progress towards action on upstream environmental causes of disease and equitable health promotion. The main goals for health, environment and climate change, in addition to Goal 3 on good health and well-being, include Goal 6 on clean water and sanitation, Goal 7 on affordable and clean energy, Goal 8 on decent work and economic growth, Goal 11 on sustainable cities and communities, Goal 12 on responsible consumption and production, and Goal 13 on climate action.

Evidence and monitoring

31. A limited number of countries have advisory bodies with the mandate and capacity to set national research agendas, generate syntheses of available evidence, track national progress on health and the

environment, and provide this information directly to policy-makers. At the international level, the Intergovernmental Panel on Climate Change carries out this function in relation to the implication of climate change for health but institutionally similar functions for other environmental challenges are less comprehensively covered and more fragmented. National and international institutions, such as research institutes, universities, and sources such as peer-reviewed journals could also play a significant role in the definition of national strategies. Greater coverage, in terms of the numbers of countries with such mechanisms, and the range of environmental risks addressed, either individually or together, would greatly advance evidence-based policy-making. All such efforts should be aligned with and contribute directly to the monitoring of the Sustainable Development Goals at the national and international levels.

WHO'S ROLE AND LEADERSHIP IN GLOBAL HEALTH

32. The Secretariat's actions under the proposed global strategy on health, environment and climate change are based around the three strategic priorities of WHO's Thirteenth General Programme of Work, 2019–2023 (Box 1). The basic health, environment and climate change activities fall under the strategic priority "Promoting healthier populations", but the contribution to "Addressing health emergencies" has also proven to be substantial. WHO's strategic priority of "Achieving universal health coverage" should underlie mechanisms for implementing basic environmental health services, such as access to safe water and clean fuels.

Box 1. The health, environment and climate change strategy and WHO's Thirteenth General Programme of Work, 2019–2023[a]

1. In WHO's corporate strategy, three strategic priorities drive WHO's contribution to ensuring healthy lives and promoting well-being for all at all ages. The three strategic priorities, with a description of how health and environment contributes to each of them, are:

(i) *Achieving universal health coverage.* Essential environmental health services, knowledge and capacities need to constitute an integral part of universal health coverage.

(ii) *Addressing health emergencies.* Improved resilience of the health sector and communities to climate change, reduced vulnerabilities, and enhanced preparedness, surveillance and response to health emergencies will prevent and reduce the health impacts of environmental emergencies.

(iii) *Promoting healthier populations.* Conditions for healthier populations include: healthier cities; sustainable provision of safe water, sanitation and hygiene practices; healthy transport solutions; clean energy policies; sustainable food; safe and sustainable products, housing and workplaces; and sustainable agriculture.

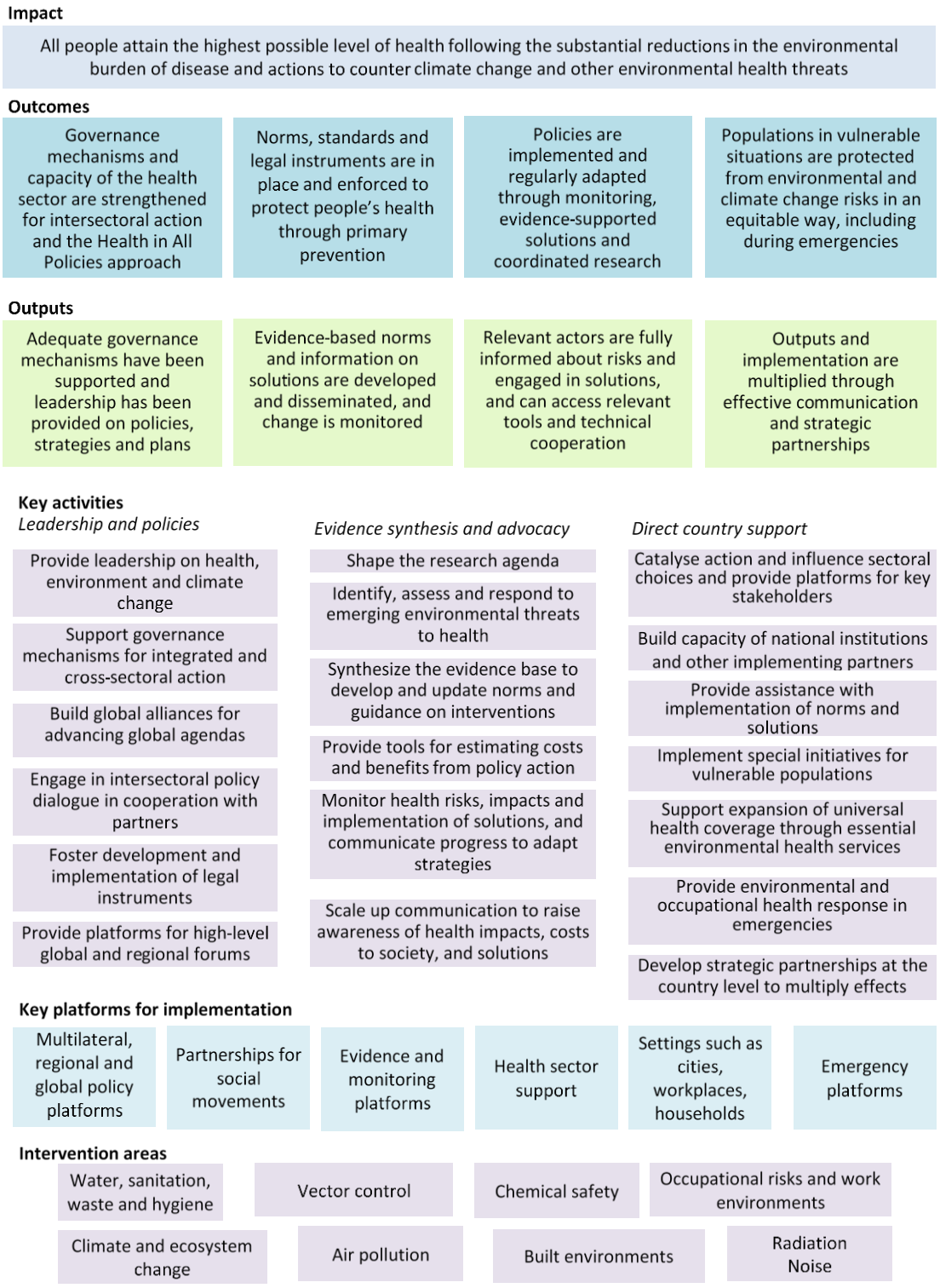
[a] Status of WHO's General Programme of Work 13 (http://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_4-en.pdf?ua=1).

33. Within these three strategic priorities, WHO is contributing to the global agenda on health, environment and climate change through its six core functions.[1] These can be grouped into: (a) leadership and policies; (b) evidence synthesis and advocacy, including the Organization's normative function, development of tools, monitoring of implementation and shaping the research agenda that will support public goods for health; and (c) provision of direct country support. Although WHO's core

[1] Providing leadership on matters critical to health and engaging in partnerships where joint action is needed; shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge; setting norms and standards and promoting and monitoring their implementation; articulating ethical and evidence-based policy options; providing technical support, catalysing change, and building sustainable institutional capacity; and monitoring the health situation and assessing health trends.

functions continue to provide the foundation of its work (see Fig. 2 for a depiction of WHO's role), important shifts need to be made to respond to evolving requirements, and are detailed below.

Fig. 2. Outline of WHO's role and leadership in health, environment and climate change



Promoting healthier populations

Under this strategic priority, WHO will undertake the following activities.

Provide leadership

(a) Provide leadership in guiding healthy energy transitions, healthy transport and urban design solutions, a safe and healthy circular economy and other ongoing transformations, by combining WHO's evidence-based guidance and enhanced advocacy. Foster high-level political support, in interactions with Member States and civil society.

(b) Coordinate regional policy processes by providing or expanding regional platforms for environment and health governance, bringing together key sectors and stakeholders.

(c) Stimulate urban governance to develop healthy and sustainable cities.

(d) Ensure that the "voice of health" is heard and ensure that health is placed at the heart of instruments, such as the Paris Agreement on climate change. It is equally important that the health sector is actively engaged in the subsequent implementation of instruments, for example through WHO's road map to enhance health sector engagement in the Strategic Approach to International Chemicals Management towards the 2020 goal and beyond.[1]

Synthesize evidence and advocate for building global public goods

(e) Ensure knowledge generation by catalysing and coordinating the expansion of the evidence base on norms, efficient solutions, research steered towards policy relevance, and emerging environmental threats to health. Evidence-based information on policy impacts will be essential to supporting cross-sector action and providing convincing arguments for seeking out co-benefits. The knowledge generated will then be synthesized into normative guidance to ensure the availability of public goods for health, such as safe water and clean air, or safe products and technologies, such as consumer goods.

(f) Disseminate evidence-based information for maximizing consideration of health in decision-making. Information creates awareness about health risks and available solutions, and triggers demand for healthier environments.

(g) Monitor change in risks to health and implementation of solutions – in terms of implementation rate, impacts, financial costs and cost–effectiveness. Continuous monitoring in order to realign priorities and implementation strategies in countries is needed. WHO will continue to expand its work in convening partners to develop data platforms that integrate the diverse data needed to monitor progress. WHO is also reporting on several indicators on health and the environment (within Goals 3, 6, 7 and 11).

[1] See http://apps.who.int/iris/bitstream/handle/10665/273137/WHO-FWC-PHE-EPE-17.03-eng.pdf?ua=1 (accessed 17 October 2018).

Enhance WHO's direct impact in countries

(h) Catalyse action for safer environments and influence sectoral choices, for example, through engaging in policy dialogue, providing guidance on healthy policies and governance mechanisms, and assisting in implementation of standards, and monitoring. The type of multisectoral and health-sector engagement will be tailored to countries' needs, and may vary in focus between upstream actions (policy-related and strategic) and downstream actions (such as technical cooperation).

(i) Enhance capacity of the health sector to fulfil its increasingly crucial functions of stewardship, leadership and coordination in health matters with cross-sectoral scope. Also lead by example in order to limit impacts of the health sector on health, the environment and climate change, in other words green the health sector.

(j) Provide platforms for key stakeholders in shaping healthy choices related to the environment and climate change. Provide data, information and advocacy material to civil society in order to support their engagement in matters concerning healthy choices in relevant policies. Support mayors and other local key actors in shaping health-supportive environments by providing tools and information on healthy choices.

(k) Develop special initiatives for populations in situations of vulnerability. Provide enhanced support to populations in vulnerable situations (such as children whose development can be affected by environmental risks, especially early life exposures, workers in the informal economy, populations living in emergency situations, poor communities, populations of small island developing States and least developed countries, and other vulnerable groups in their specific context). Provide this support by strengthening health systems' resilience to climate risks, aiding efforts to adapt to climate change, and promoting measures to mitigate the effects of climate change around the world so as to ensure the long-term future of the most vulnerable populations.

(l) Provide emergency response. Support countries in developing systems to be prepared for environmental disasters and emergencies and to provide normative and technical guidance. Strengthen global and regional networks of experts to provide support to countries in responding to environmental emergencies. Responding to environmental health emergencies and delivery of environmental health services represent additional important activities in countries.

Addressing environmental health emergencies

34. Man-made conflicts, technological incidents and natural disasters take a toll on people's lives and health around the world, with climate change and forced migration being likely to further intensify such emergency situations. The number of displaced people fleeing emergencies is increasing, with the greatest effects being felt in countries with the worst environmental health conditions and the least capacity to respond to environmental health emergencies.

35. A systematic approach to environmental emergencies, such as a chemical or nuclear release, and to the environmental health aspects of all types of emergencies requires the Secretariat to work with all Member States to invest in assessment of vulnerability and risk, as well as planning for preparedness, response and recovery. The International Health Regulations (2005) provide a readily available vehicle to build national and regional capacities in core competencies pertinent to the detection of, preparedness for and response to chemical, zoonotic, radiological and nuclear events.

36. The objectives for environmental health management in emergencies are as follows.

(a) Identify, assess and map environmental and occupational health risks and vulnerabilities in countries susceptible to crisis.

(b) Improve capacities to effectively prepare for and manage the environmental and occupational health aspects of emergencies.

(c) Ensure that health care facilities have access to basic environmental health services, such as those for adequate water, sanitation and hygiene and to clean, reliable energy; are sited away from risk zones such as flooding; and have in place systems for managing occupational health and safety.

(d) Protect people's health from environmental risks throughout the phases of the management cycle of the disaster or emergency.

37. Suggested priority actions for environmental health management in emergencies are outlined in the Table.

Table. Suggested priority actions for environmental health management in emergencies

Strategic response	Action by Member States	Action by the Secretariat
Developing the capacities of the health sector to manage environmental and occupational health services throughout the life cycle of emergencies	• Develop environmental health emergency profiles (such as resource mapping and organization) and establish or update environmental health plans for emergencies • Operationalize policies, programmes and management systems pertinent to environmental health services in health care facilities, including the assessment, provision and restoration of services • Integrate the protection of occupational health and safety into national health security plans	• Develop systems for the prediction and early warning of, and preparedness for, environmental disasters and manmade emergencies • Establish global and regional networks of qualified environmental and occupational health specialists and sanitarians who can be mobilized and deployed in a timely manner to provide support to countries in need • Build countries' capacities to protect occupational health and safety in public health emergencies
Providing adequate environmental health services in health care facilities during emergencies	• Strengthen the health sector capacity to develop and operationalize policies, programmes and management systems pertinent to environmental and occupational health services in health care facilities, refugee camps and other areas hosting internally displaced persons	• Provide normative and technical guidance
Developing national capacities for responding to chemical radiological and nuclear events for implementation of the International Health Regulations (2005)	• Strengthen national capacities for responding to chemical, radiological and nuclear events. Leverage capacity-building in core capacities required by the International Health Regulations (2005)	• Provide normative and technical guidance • Strengthen global and regional thematic networks of experts to provide support to countries in monitoring and responding to chemical and nuclear events

Achieving universal health coverage by providing environmental health services

38. One of WHO's strategic priorities is to provide support to countries in making progress towards universal health coverage. Universal health coverage includes ensuring that all people have access to and can use promotive and preventive health services appropriate to their needs, while not exposing the user to financial hardship. Essential environmental services with the main aim to improve health are an integral part of universal health coverage. Such services include, for example, provision of drinking water of safe quality, safely managed sanitation services, clean energy and technologies, and workforce protection, both within health care facilities and within communities.

39. Essential health services will be the key to reduce outbreaks of infectious diseases (resulting, for example, in a reduction in the number of individuals with diarrhoeal diseases, following improved water and sanitation services) and noncommunicable diseases (for example, cardiovascular and chronic respiratory diseases through clean energy and technologies in households).

Goals to be achieved

40. Within the draft global strategy, the goals to be achieved by the transformational approach are highlighted in Box 2.

Box 2. Goals to be achieved by the transformational approach

To sustainably improve lives and well-being through healthy environments

1. **People.** People live longer and healthier lives owing to the reduction of environmentally-related diseases. People are aware of the environmental exposures harming their lives and of the benefits of more sustainable choices and make their voice heard by policy-makers. This ultimately leads to **better health and well-being**.
2. **Universal health coverage.** People benefit from **primary prevention** measures, such as essential environmental and occupational health services and health promotion, as an integral part of universal health coverage.
3. **Air pollution.** Countries and major cities have set health-based **air-quality targets** and have put in place policies to achieving the targets by **involving relevant sectors**. Polluting **fuels** and inefficient **technologies** are no longer used. Emissions have been significantly reduced.
4. **Climate change.** Health systems and communities around the world are **resilient** to climate variability and change, and drive down rates of climate-sensitive infectious disease. Carbon emissions meet the targets of the **Paris Agreement on climate change**. Cleaner **energy systems** are built, efficient **public transport systems** promoting **active movement** are in place, and more sustainable diets and more resilient food systems are promoted and implemented.
5. **Water, sanitation and hygiene.** All countries have incorporated the pillars of the **Water and Sanitation Safety Planning** into their strategies and have adequate hygiene integrated into the water safety plans. Sanitation and waste-water barriers to **combat antimicrobial resistance** are in place.
6. **Chemical safety. Impacts on health** from exposure to chemicals are reduced, as the health impacts from exposure to chemicals and their mixtures are **better known**, the use of chemicals is well regulated, national institutions have the **capacity** to meet chemical threats, including incidents and **emergencies**, and are involved in chemicals **management activities**.
7. **Radiation safety.** Health impacts from **ultraviolet radiation** are **decreasing** through better awareness of risks, and better personal protection. Unnecessary exposures from **medical imaging techniques** are eliminated. Lung cancers from exposure to **radon** are reduced through efficient preventive measures. **Nuclear incidents** are adequately responded to and managed.

8. **Health care settings.** All health care facilities and services are environmentally sustainable: using **safely managed water and sanitation services and clean energy**; sustainably managing their waste and procuring goods in a sustainable manner; are **resilient** to extreme weather events; and capable of protecting the health, safety and security of the **health workforce**.
9. **Workplaces.** All workplaces have systems in place for the management of **occupational health and safety** and for **promotion** of health at work. All workers have access to essential interventions for the prevention and control of occupational and work-related diseases and injuries.
10. **Global and regional settings.** International agreements and policies are in place that efficiently deal with **global and regional drivers of health**, such as climate and ecosystem change.
11. **Emergencies.** All countries have the capacity to **manage environmental health services** effectively throughout emergencies. Countries have the capacity to **respond** to chemical, radiological and nuclear events and to **protect** the occupational health and safety of emergency responders.
12. **Governance.** National and local governments (for example, of cities) have mechanisms in place that facilitate **cross-sectoral cooperation** and integrate **health in all relevant policies** and ensure that they fulfil their obligations to provide safe environments for their citizens.

41. The WHO website provides access to supporting documents and details of activities in the Secretariat's priority intervention areas, including translations.[1]

MEASURING PROGRESS TOWARDS THE SUSTAINABLE DEVELOPMENT GOALS

42. The main targets for measuring progress, aligned with WHO's Thirteenth General Programme of Work, are listed below (for the period 2019–2023).

Within Goal 3 (Ensure healthy lives and promote well-being for all at all ages)

- Reduce the mortality rate from air pollution by 5%.

Within Goal 6 (Ensure availability and sustainable management of water and sanitation for all)

- Provide access to safely managed drinking water services for 1 billion people.
- Provide access to safely managed sanitation services for 0.8 billion people.
- Reduce by 40–50% the number of people in low- and middle-income countries served by hospitals without reliable electricity and basic water and sanitation services.

Within Goal 13 (Take urgent action to combat climate change and its impacts)

- Double the amount of climate finance for health protection in low- and middle-income countries.
- Reduce by 10% mortality from climate-sensitive diseases (through climate change action rather than other drivers).

[1] See http://www.who.int/phe/publications/global-strategy/en/ (accessed 29 November 2018).

43. Additional and more detailed indicators are being monitored within each of the environmental health areas. The main health-related Sustainable Development Goals and indicators are listed in Box 3.

Box 3. The main Sustainable Development Goals and their indicators linked to health and the environment[a]

Goal 3. Ensure healthy lives and promote well-being for all at all ages

- *3.9.1 Mortality rate attributed to household and ambient air pollution*
- *3.9.2 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)*
- *3.9.3 Mortality rate attributed to unintentional poisoning*

Goal 6. Ensure availability and sustainable management of water and sanitation for all

- *6.1.1 Proportion of population using safely managed drinking water services*
- *6.2.1 Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water*
- *6.3.1 Proportion of wastewater safely treated*
- *6.a.1 Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan*
- *6.b.1 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management*

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

- *7.1.2 Proportion of population with primary reliance on clean fuels and technology*

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

- *8.8.1 Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status*

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

- *11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)*

Goal 12. Ensure sustainable consumption and production patterns

Goal 13. Take urgent action to combat climate change and its impacts

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Systemic issues: Policy and Institutional coherence

- *17.14.1 Number of countries with mechanisms in place to enhance policy coherence of sustainable development*

[a] Indicators in italics are those for which WHO is the custodial agency. Note that this list is not exhaustive: many more Goals and their indicators are linked to health.

ACTION BY THE EXECUTIVE BOARD

44. The Board is invited to note this report and provide further comments and guidance on the draft WHO global strategy on health, environment and climate change.

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