Annex

A. WHO regional strategies in health, environment and climate change

Earlier WHO strategies in the area of health and environment include the WHO global strategy for health and environment, 1993, and the WHO public health and environment global strategy overview, 2011. These strategies have been reinforced by recent additional global and regional WHO strategies in various environmental health areas, including those indicated below.

Cross-cutting issues

- Ostrava Declaration of Environment and Health (2017)
- Regional Strategy for the Management of Environmental Determinants of Human Health in the African Region 2017–2021
- PAHO resolution CD53.R2 (2014) on Plan of Action on Health in All Policies
- United Nations General Assembly resolution 70/1 (2015): Transforming our world: the 2030 Agenda for Sustainable Development
- Resolution WHA69.11 (2016) on Health in the 2030 Agenda for Sustainable (multisectoral approach to the Sustainable Development Goals)
- Resolution WHA67.14 (2014) on Health in the post-2015 development agenda (multisectoral action to address environmental determinants of health)
- Regional strategy on health and the environment and plan of action 2014–2019 (Eastern Mediterranean Region).
- Resolution WHA66.11 (2013) on Health in the post-2015 development agenda
- Resolution EUR/RC60/R7 (2010) on the future of the European environment and health process
- Resolution WHA66.10 (2013) in which the Health Assembly decided to endorse the global action plan for the prevention and control of noncommunicable diseases 2013–2020

Air quality

- Regional plan of action to implement the global roadmap on air pollution and health 2017–2021 (Eastern Mediterranean Region, document EM/RC65/INF.DOC.3)
- Decision WHA69(11) (2016) on health and the environment: road map for an enhanced global response to the adverse health effects of air pollution
- Resolution WHA68.8(2015) on health and the environment: addressing the health impact of air pollution

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1 WHO global strategy for health and environment, endorsed in resolution WHA46.20 (1993).
3 The outcome document of the Sixth Ministerial Conference on Environment and Health, held in Ostrava, Czechia, on 13–15 June 2017.
Water and sanitation

- Resolution WHA64.24 (2011) on drinking-water, sanitation and health

Chemical safety

- Decision WHA70(23) (2017), in which the Health Assembly approved the road map to enhance health sector engagement in the Strategic Approach to International Chemicals Management towards the 2020 goal and beyond
- Resolution WHA67.11 (2014) on public health impacts of exposure to mercury and mercury compounds: the role of WHO and ministries of public health in the implementation of the Minamata Convention
- Resolution WHA63.26 (2010) on improvement of health through sound management of obsolete pesticides and other obsolete chemicals
- PAHO resolution CD52.R10 (2013) on chronic kidney disease in agricultural communities in Central America

Workers’ health

- Resolution WHA60.26 (2007) on workers’ health: global plan of action
- Resolution WHA70.6 (2017) in which the Health Assembly adopted “Working for Health”: the ILO, OECD and WHO five-year action plan for health employment and inclusive economic growth (2017–2021)
- Resolution WHA70.15 (2017) on promoting health of refugees and migrants
- PAHO document CD54/10, Rev. 1, Plan of Action on Workers’ Health 2015-2025

Waste management

- United Nations General Assembly resolution 71/3 (2016) on the political declaration of the high-level meeting of the General Assembly on antimicrobial resistance
- Resolution WHA69.4 (2016) on the role of the health sector in the Strategic Approach to International Chemicals Management towards the 2020 goal and beyond
- Resolution WHA63.25 (2010) on improvement of health through safe and environmentally sound waste management

Climate change

- PAHO resolution CD51.R15 (2011) on Strategy and Plan of Action on Climate Change
- Resolution WHA61.19 (2009) on climate change and health
B. Priority intervention areas for the Secretariat in health, environment and climate change

B1. Water, sanitation, waste and hygiene (WASH)
WHO’s activities on drinking-water, sanitation and health are set forth in resolution WHA64.24.

Change objectives

Leadership, coordination and policies

- WASH and health care waste management in health-care facilities are included in global and national health policies and programmes. This includes those for priority areas such as antimicrobial resistance, infection prevention and control, maternal, newborn and child health and universal health coverage. Development and implementation of such plans require that key decision-makers, health facility staff and users champion WASH in HCFs. By 2025, 50 low- and middle-income countries have national standards and policies on WASH in health-care facilities.

- Environmental drivers of resistance through WASH and wastewater are characterized and risk management strategies are reflected in antimicrobial resistance national action plans.

Knowledge and evidence

- The evidence base is strengthened, and environmental management interventions are designed accordingly for the reduction of the burden of water-related vector-borne diseases in the context of water resources development and management, as related to Sustainable Development Goal targets 3.3, 3.9, 6.3, 6.5 and 6.6.

- Robust information is available on the WASH enabling environment, WASH financial flows, and external support agency funding, priorities and activities; and strengthens evidence-based policy development and programming as well as the targeting and absorption of WASH funds, which ultimately increases access to WASH services.

- The database of the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation is expanded and updated to produce robust baselines and trends for existing and new WASH indicators. The Joint Monitoring Programme remains the global custodian of WASH data and a trusted source of official estimates of progress towards the Sustainable Development Goals and other international WASH targets.

Interventions

- Innovative approaches to sanitation (to achieve greater access, better safety, proper treatment and affordable services) are promoted in support of achieving the Sustainable Development Goal target 6.2 indicator on safely-managed sanitation services.

- Support is provided for continuous and sustainable improvements in water safety and the achievement of the Sustainable Development Goal target 6.1 indicator on safely managed drinking-water services.

- Inequalities in access are reduced by targeting WASH in disease-endemic areas and among vulnerable groups and by tailoring interventions to better interrupt disease transmission.

- Small community water supplies and sanitation waste management services are enhanced, particularly in respect of water scarcity and climate change, and with small island developing States receiving special attention.
• Health benefits from sanitation policies are achieved and interventions enhanced through integration of new WHO sanitation and health guidelines and updated wastewater use guidelines into national policies.

**Problem statement/opportunity**

Safe drinking-water, sanitation and hygiene are crucial to human health and well-being. Not only are they a prerequisite for health, they also contribute to livelihoods, school attendance and dignity and help to create resilient communities living in healthy environments. Drinking unsafe water impairs health through illnesses such as diarrhoea, and untreated excreta contaminate groundwaters and surface waters that are used for drinking water, irrigation, bathing and household purposes, creating a heavy burden on communities. Deaths from diarrhoea as a result of inadequate WASH were reduced by half during the period of the Millennium Development Goals (1990–2015), with the significant progress on provision of water and sanitation playing a key role. Overall, improvements achieved over the period of the Millennium Development Goals had a positive impact on the livelihoods of many and reduced the burden of disease related to unsafe WASH.¹

However, poor WASH conditions still account for 842 000 deaths from diarrhoea every year² and constrain effective prevention and management of other diseases and conditions including malnutrition, neglected tropical diseases and cholera. Evidence suggests that improving service levels towards safely managed drinking-water or sanitation (indicators for Sustainable Development Goal targets 6.1 and 6.2) such as regulated piped water or connecting to sewers with wastewater treatment can dramatically improve health. Access to sustainable WASH services is a critical aspect of equity, is an essential element of universal health coverage and is recognized by the United Nations as a fundamental human right.

The Sustainable Development Goals offer unprecedented opportunities to improve health by dramatically increasing availability and use of WASH services. WHO can contribute by supporting countries to improve policy, governance and monitoring. The Goals also present increased demands for WHO’s technical assistance related to formulation of national targets, effective regulation and surveillance systems, risk management and WASH indicators. This work is supported by WHO’s traditional role of monitoring, which will encompass establishing robust baselines for achievement of the Goals and tracking progress towards national and international WASH targets.

Beyond the WASH-focused Goal 6, WASH is important in the intersectoral collaboration and synergetic efforts required to achieve the ambitious Goals across health, education, climate change, nutrition, energy and ending poverty. Achievement of numerous Sustainable Development Goals, including Goal 3 on health and Goal 13 on climate change cannot be met without meaningful progress on Goal 6.

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**Unique role and added value of WHO**

WHO, through its existing and emerging initiatives, is well-positioned to influence WASH health gains for the following reasons.

- The strong focus of Sustainable Development Goal 6 on safely managed WASH services – with “safely” implying an essential health dimension – reinforces the need to manage and monitor drinking-water and sanitation according to internationally-accepted WHO norms and guidance.

- The Sustainable Development Goal target language of access to WASH for “all”, implying all settings, along with recent evidence showing challenges in small systems and rural areas, as well as extreme neglect for WASH in health care and educational facilities, has driven interest from countries and partners to take action and seek WHO guidance to improve and monitor these particularly vulnerable settings.

- With recognition of the funding gap for meeting the Sustainable Development Goals and the need to spend existing resources more effectively, demand has grown from countries and sector partners to apply tools like WHO’s TrackFin¹ to support countries in tracking funding to WASH and thereby increase their ability to more effectively raise and/or allocate resources.

- The emphasis of the 2030 Agenda for Sustainable Development on integrated and multisectoral responses implies an increased need for WHO’s established WASH coordination and leadership within and beyond WHO.² Acknowledging the interconnectivity of the Sustainable Development Goals highlights the importance of increasing WASH collaboration with programmes working on climate change, antimicrobial resistance, cholera, emergencies, infection prevention and control, maternal, newborn and child health, neglected tropical diseases and nutrition.

- The Sustainable Development Goals’ emphasis on the lead role of countries and governments in national target-setting and monitoring increases demand for:
  - WHO’s role in regional processes and multilateral agreements that support Member States in translating and operationalizing WASH-related Sustainable Development Goal targets through policy dialogue, intersectoral work and whole-of-government approaches; and
  - WHO technical collaboration for strengthening national WASH monitoring systems and annual review mechanisms.

**Activities and outputs for the period 2018–2019**

*Leadership and policies*

- Develop and disseminate policy brief and other technical guidance on sanitation and wastewater barriers to combat antimicrobial resistance.

- Develop a strategy to improve WASH in health care facilities as a means to improve quality care and to achieve universal health coverage.

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² For example, in Sustainable Development Goal targets: 3.8 – universal health coverage, WASH is included as tracer indicator for a package of indicators; 3.9 – deaths from hazardous chemicals, air, water and soil pollution; 4.A – upgrading educational facilities, WASH in schools; and other indicators with links to WASH include those for targets 1.4 basic services for poor, 2.2 ending all forms of malnutrition, and 5.5 full and effective participation by women at all levels.
**Evidence synthesis**

- Develop, update and disseminate health-based guidelines on drinking-water, including small water supplies.
- Finalize, disseminate and initiate country support for new WHO sanitation and health guidelines.
- Evaluate household water treatment technologies; publish Round II and III testing results and simplified protocols for low-resource settings.
- Develop, update and disseminate health-based guidelines on recreational water quality.
- Produce methodology, data and estimates for global baseline report on safely treated wastewater for Sustainable Development Goal target 6.3.
- Publish global report on disease burden from water, sanitation and hygiene.
- The reporting cycle of the UN-Water initiative the Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) for the period 2018–2019 is completed and reports disseminated based on data from at least 100 countries and 30 external support agencies.
- Support detailed WASH financial data from 18 countries through WHO TrackFin training and technical assistance and multilingual tools, guidance and training materials.
- Streamline and improve methods for WASH monitoring: implement water quality testing module in at least 12 countries, and refine and standardize modules for safely managed sanitation services.
- Produce global and regional reports on status of WASH in schools, and on WASH in health care facilities.
- Develop and publish guidance for field collection of data, including use of real time monitoring tools such as digital platforms for data collection and analysis.

**Country support**

- Provide tools and country-support for climate-resilient water safety planning and standard setting.
- Provide targeted support to countries for water safety planning implementation and strengthening drinking quality surveillance programmes.
- Finalize tools and provide technical assistance and field support to improve WASH in health care facilities (WASH FIT tool), including in emergency response.
- Scale up training and country support on sanitation safety planning and safe use of wastewater, excreta and greywater, incorporating climate resilience.
- Provide focused training in selected countries to improve health care waste practices and infrastructure; publish compendium of health care waste technologies.
- Provide information and country technical support to integrate WASH with cholera prevention and control efforts.
- Strengthen capacities of the health sector in water-related disease surveillance and outbreak management systems, and preparedness and response to WASH-related emergencies.
Partnerships, advocacy

- Develop and disseminate information materials to improve WASH in health care facilities.
- Support implementation of the WASH and neglected tropical disease strategy\(^1\) with advocacy, tools and technical support to countries.

B2. Climate and ecosystem change

Change objectives

In line with the Sustainable Development Goals, WHO aims to ensure that by 2030, health systems around the world are resilient to climate variability and change; and that the largest economies are reducing carbon emissions to an extent that will meet the targets of the Paris Agreement on climate change (2015), and in such a way as to gain health co-benefits of mitigation, particularly through reduced air pollution. The WHO programme on climate change and health supports this goal by providing national health authorities with the political, technical and evidence-related and financial support to:

- better understand and address the effects of climate change on health, including those mediated via climate change impacts on the main determinants of health (i.e. food, air, water and sanitation);
- improve health services’ resilience to climate change and their environmental sustainability;
- promote the implementation of climate change mitigation actions by the most polluting sectors (e.g. health, transport, energy, food and agriculture) that maximize health co-benefits.

Problem statement/opportunity

By 2030, climate change is expected to cause over 250,000 additional deaths each year. At the same time, the same drivers that are causing climate change, polluting and inefficient energy systems, and unsustainable development pathways, are also themselves causing huge health and socioeconomic impacts. Air pollution causes approximately 7 million deaths, and outdoor air pollution alone causes over US$ 2.5 trillion in uncompensated health damages, each year. The world is not yet responding to the scale of the problem. Although over 95% of least developed countries identify health as a priority sector for adaptation, less than 1.5% of international finance for climate change adaptation is currently allocated to health projects.

Strengthening the resilience of health systems, through means ranging from surveillance to management of environmental risk factors, would both save lives now, and increase resilience to climate risks in the future. Implementing targeted measures to address short-lived climate pollutants would be expected to save approximately 2.4 million lives a year and reduce global warming by about 0.5 °C by 2050. It is estimated that pricing carbon in line with health and other environmental damages can be expected to decrease outdoor air pollution by half, reduce greenhouse gas emissions by over 20%, and raise over US$ 3 trillion each year in revenue.

Unique role and added value of WHO

WHO has a world-leading programme on climate change and health, developed over 25 years, that can now provide comprehensive support both to protect health from climate risks, and to ensure that actions to mitigate climate change also protect and improve people’s health.

The programme works effectively across different thematic areas of WHO’s work, from air pollution, to water and sanitation, to disease surveillance and disaster preparedness, and particularly across the three levels of the Organization, with over 80% of the human and financial resource capacity distributed among country and regional offices to support country-level implementation, backed by leadership, partnerships, resource mobilization and technical support from headquarters. It further makes use of partnerships with other United Nations agencies, including with WMO on climate information for health, UNDP on implementation of country projects, and UNEP on broader environment and health policy.

Activities and outputs for the period 2018–2019

Advocacy and partnerships

- Completion of WHO’s Third Global Conference on Health and Climate, as a globally dispersed conference focussed on reaching the most remote and vulnerable countries, namely: small island developing States.
- Further development and implementation of joint initiatives and projects with key United Nations partners including the secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), WMO, UNEP and UN DP, including through the Health, Environment and Climate Change Coalition.

Evidence

- Scaled up coverage of the WHO/UNFCCC country profiles on climate and health as the established global systems for providing tailored information and for tracking national progress on climate change and health, reaching over 60 countries by the end of 2019.
- Provision of global and regional estimates of the health gains that countries can expect from implementing their commitments under the Paris Agreement on climate change, through reduced burdens of air pollution.

Implementation

- Provision of a comprehensive programme of policy and technical support to Member States, based on WHO’s operational framework for building climate-resilient health systems.¹
- Country led design and implementation of the WHO/UNFCCC/Conference of the Parties Presidency initiative on “Climate change and health in small island developing countries”.
- Expansion of WHO’s coverage of large-scale country projects on health adaptation to climate change, to reach over 30 low- and middle-income countries.

• Improved access of national health ministries to the main international climate funding streams, to triple the current level of investment of international climate finance for health by 2023.

B3. Air pollution

The objectives outlined draw upon the structure and outputs provided in the Road Map for an enhanced global response of to the adverse health effects of air pollution, which was welcomed by the Sixty-ninth World Health Assembly in 2016.¹ Building upon the priorities and support for mitigating the health impacts of air pollution, WHO’s air pollution activities are built on a the following set of objectives.

Global leadership and coordination

• Leveraging health sector leadership and coordinated action at the global, regional, country and city levels in order to enable an appropriate and adequate response to this major public health problem, and ensuring synergies with other global processes (e.g. 2030 Agenda for Sustainable Development, Paris Agreement).

Expanding the knowledge base

• Building and disseminating global evidence and knowledge relating to the health impacts of air pollution, the effectiveness of policies and interventions (in health terms) that has been undertaken by different sectors, including self-protection to address air pollution and its sources.

Monitoring and reporting

• Enhancing systems, structures and processes needed to support monitoring and reporting on health trends associated with air pollution and its sources and fulfilling the requirements of the resolution, while contributing to the monitoring of progress with respect to the Sustainable Development Goals (i.e. Goal targets 3.9, 7.1 and 11.6)

Institutional capacity strengthening

• Building the capacity of the health sector to analyse and influence policy and decision-making processes in support of joint action on air pollution and health (e.g. support the implementation of the recommendations found in the WHO air quality guidelines).

Problem statement/opportunity

WHO estimates that some 7 million people die each year from exposure to the combined effects of ambient and household air pollution. There is an urgent need to take strong and concerted action now.

Traditionally thought of as an ‘urban problem’, air pollution is now well understood to be effecting all populations living beyond city limits, and impacting the lives of those living in rural, and peri-urban areas. The health risks posed by air pollution are particularly dire for the most vulnerable populations (e.g. poor, elderly, children, women and outdoor workers). Therefore, there is a need to

¹ See decision WHA69(11).
ensure that country support and capacity-building are available to protect the health of these populations from the adverse impacts of air pollution.

Addressing the health impacts of air pollution requires the concerted and coordinated cross-sectoral action of the health and other sectors to develop and implement effective policies and interventions. The evidence base linking air pollution and health risks is strong. WHO’s normative guidance clearly defines safe levels of air pollution (WHO Air Quality Guidelines) and makes recommendations on what household fuels and technologies can be considered clean for health; substantial data tracking trends in air pollution at country level are also readily available to countries. These and other information resources are often inaccessible or not well understood by those working in the health sector and even less so by those working in other sectors, like energy, transport and waste. Furthermore, there is a paucity of sound assessments of the costs and effectiveness of air pollution interventions in health terms, as well as of the wider social and environmental impacts.

**Unique role and added value of WHO**

For over three decades, WHO has provided the evidence base, normative guidance and extensive monitoring to raise awareness air pollution and track its impacts on health. With its strong convening power, WHO is therefore uniquely placed to bring together a variety of stakeholders to tackle air pollution and its health impacts. WHO also has the mandate from all health ministers to build the capacity of and provide the resources for the health and the other sectors to tackle root causes of air pollution and its health risks, as noted in the resolution WHA 68.8 (2015) on health and environment: addressing the health impact of air pollution.

**Activities and outputs for the period 2018–2019**

**Global leadership and coordination**

- Host the first global conference on air pollution and health where high-level and technical representatives from countries are expected to gain a stronger understanding of the health impacts and to make commitments to tackling the global problem of air pollution and health.
- Raise awareness of air pollution, its health impacts and effective interventions through the Breathe Life campaign and other communication channels.

**Expanding the knowledge base**

- Provide syntheses of evidence from cost-effectiveness analyses of air pollution interventions and guidance for countries to conduct a similar analysis.
- Update the recommendations of the air quality guidelines to reflect new evidence on the health impacts of different pollutants.
- Provide syntheses of the evidence on the health impacts from sand and dust storms, the effectiveness of personal-level interventions (i.e. face masks, air filters), and low-cost sensors.

**Monitoring and reporting**

- Provide updated statistics on air pollution exposure (both outdoor and household) and related disease burden in terms of mortality and morbidity.
• Fulfil the mandates as the custodial agencies for Sustainable Development Goal air pollution-related indicators 3.9.1 (health), 7.1.2 (energy) and 11.6.2 (cities) with regular reporting and collaboration with other Sustainable Development Goal reporting mechanisms and agencies.

• Continue and build upon its monitoring function by expanding current data collection to include:
  - data on levels of other health damaging-pollutants (e.g. NOx)
  - exposure levels and health impacts of different sources of air pollution
  - more disaggregated data by geographic region, sex and season

**Institutional capacity strengthening**

• Strengthen the capacity of the health and other sectors (e.g. energy) to design and implement policies for clean household energy in line with the *WHO indoor air quality guidelines: household fuel combustion*.¹ Much of this work will be completed and based on further development and piloting of the Clean Household Energy Solutions Toolkit (CHEST).² Tools and resources in CHEST are focused on:
  - household energy and health needs assessment and stakeholder mapping
  - identification of policy and technical interventions
  - guidance on the development and implementation of standards for household energy fuels and technologies
  - monitoring and evaluation of household energy use and health
  - strengthening the engagement and capacity of the health sector
  - awareness raising and communications.

• Provide tools and resources (e.g. software for health risk assessment – *Air Q+*)³ to support the health sector to effectively engage and support the selection of air pollution interventions and monitor their effectiveness at country-level.

**B4. Chemical safety**

**Change objectives**

The objectives below are taken verbatim from the outcome statements of the four action areas included in the road map to enhance health sector engagement in the Strategic Approach to International Chemicals Management towards the 2020 goal and beyond⁴ (the WHO chemicals road map) approved by the Seventieth World Health Assembly in May 2017.⁵

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⁵ See decision WHA70(23).
Leadership and coordination

- Increased awareness and integration of health considerations and engagement of the health sector in chemicals management activities at the national, regional and international levels, including engagement with other sectors, leading to an increased profile and priority for the global sound management of chemicals throughout their life cycle.

Institutional capacity

- Increased capacity and resilience of health systems in order to address all aspects of chemical safety.

Knowledge and evidence

- Enhanced engagement of the health sector in cooperative efforts to fill current gaps in knowledge and methodologies for risk assessment, biomonitoring, surveillance, estimating the burden of disease, and measuring progress. This includes greater participation in networks and development of new cooperative mechanisms, as necessary, to facilitate knowledge-sharing and collaboration within the health sector on specific technical issues.

Risk reduction

- Improved health, in both the short and the long term and for future generations through the reduction of risk to health from exposure to chemicals throughout their life cycle, including as waste, resulting from increased health protection activities by the health sector at the national, regional and international level, as well as from greater interest and awareness within the health sector and in the general community.

Problem statement/opportunity

An estimated 1.3 million lives were lost in 2012 owing to exposures to selected chemicals, such as lead and pesticides. However, data is only available for a few chemical exposures, whereas people are exposed to many more chemicals in their daily lives. Many countries still lack the necessary regulatory and policy frameworks and institutional capacities to assess and prevent the negative health impacts of chemicals. The engagement of the health sector is crucial in order to identify risks and to work with other sectors, as necessary, to identify and implement effective interventions, given the importance of prevention in relation to chemical exposures.

Unique role and added value of WHO

The WHO chemicals road map identifies concrete actions in which the health sector has a leading or important role to play in support of sound chemicals management at the national, regional and/or international levels. For the greatest chance of success, improved coordination and collaboration within the health sector and with other sectors are required. Given WHO’s mandate and three-tiered structure (global/regional/country), the Organization is well placed to lead this work. Of note is the particular responsibility given to the Organization in respect of chemical contamination by the core capacity requirements under the International Health Regulations (2005).

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Activities and outputs for the period 2018–2019

The WHO Secretariat will focus on the following road map actions:

- Operationalize the newly established global chemicals and health network to facilitate health sector implementation of this road map
- Provide guidance on the prevention of negative health impacts from specific chemicals of concern; finalize guidelines on the prevention and management of lead poisoning
- Continue to develop and enhance tools, guidance, capacity building and other support to countries, in order to strengthen core capacities for chemical incidents and emergencies
- Coordinate activities of the WHO Chemicals Risk Assessment Network, which comprises more than 80 institutions worldwide
- Promote the inclusion of health sector priorities in international instruments, including the Minamata Convention on Mercury (in accordance with resolution WHA67.11 (2014)) and the framework for chemicals management beyond 2020.

B5. Occupational risks and working environment

Change objectives

- All workers, and particularly workers in the informal economy, small enterprises and agriculture, together with migrant workers have access to essential interventions for prevention and control of occupational and work-related diseases and injuries.
- Health systems have capacities to assess the health impacts of work and employment and to collaborate effectively with labour and other sectors to achieve a safer working environment and healthier future of work.
- Health services have the capacity to detect and contribute to registration and prevention of occupational diseases and injuries, to monitor the health of workers and to contribute to work productivity.

Problem statement/opportunity

Work and employment are rapidly changing. New forms of work, employment and technological processes often are being introduced without their potential health impacts being assessed and measures for prevention of health risks being taken early in the design stage. The health impacts of working with robots and artificial intelligence, teleworking, platform-based economies, 24-hour services, and global supply chains need to be fully assessed.

Sedentary work, long working hours, psychosocial risks (work stress and suffering at work), and lack of access to healthy food are major risk factors for the global epidemic of noncommunicable diseases – cancer, ischemic heart disease and stroke, respiratory diseases, diabetes, depression and anxiety. Environmental pollution, air pollution, waste handling and climate change also shape significantly the working conditions of outdoor workers and workers engaged in green jobs and in enhancing climate resilience.

The current organization of occupational health and safety and of health care services for working people needs to evolve and adapt to the new trends on the world of work. For example,
occupational health services created under ILO Convention 161 are not adapted for small enterprises, platform-based work, migrants, domestic and home-based work and all other new forms of employment and work relations. The current system for reporting, registration and compensation of occupational diseases and work accidents relies on reporting by the employer, and is not working for 70% of the people working in the informal economy and platform-based work without an employer.

**Unique role and added value of WHO**

WHO led the implementation of a global plan of action on workers’ health 2008–2017. Though the plan stimulated the development of a number of global and regional products to address all determinants of workers’ health, its objectives have not been completely achieved at the country level. There are still global gaps regarding the availability of data to measure and monitor workers’ health and the good practices and evidence for addressing the health challenges of workers in the informal economy, migrant workers and hazardous child labour. WHO leads the global work on strengthening countries’ capacities for protection of the occupational health and safety of health workers and emergency personnel, in collaboration with ILO.

**Activities and outputs for the period 2018–2019**

- Technical support for development of national policies and action plans on workers’ health in countries and for developing specific national programmes and building capacities for occupational health and safety of health workers and for responding to public health emergencies.
- Establishment of a global observatory for workers’ health with data measuring the determinants of workers’ health at the country and international levels, and development, in collaboration with ILO, of a methodology for estimating work-related health impacts.
- Development of a toolkit for making national programmes and action plans on workers’ health climate sensitive, including specific actions on prevention and control of work-related climate sensitive diseases, such as heat stress and vector-borne diseases at the workplace.
- Collection, analysis and dissemination of evidence and good practices for addressing the specific health problems of workers in the urban informal sector and in small-scale farming, including domestic and international migrant workers.
- Development of methods for the early detection of high-priority occupational diseases and technical support to countries for integrating essential interventions for prevention and control of occupational and work-related diseases into people-centred primary care delivery.

**B6. Radiation**

**Change objectives**

To reduce the burden of disease associated with radiation exposures in planned, natural and accidental situations.
Evidence and knowledge

- Engagement of the health sector and other relevant stakeholders in cooperative efforts to fill current gaps in knowledge and methodologies for radiation risk assessment, radiation dosimetry, health surveillance and radio-epidemiology. This includes research priority-setting and knowledge-sharing.

Capacity building

- Development of norms, standards, guidelines and other technical tools and supporting activities (e.g. education, training and exercises), and provision of access to technical expertise worldwide to increase country capacity to deal with all aspects of radiation safety and respond to radiation emergencies.

Interventions and risk communication

- Coherent evidence-based policies and interventions at the national, regional and international levels, increased awareness within the health sector and among the public through effective risk communication, reduction of health risks from exposure to radiation, resulting in improved short- and long-term health outcomes.

Coordination and leadership

- Integration of health considerations and engagement of health sector in radiation-risk management-related activities at the national, regional and international levels, including engagement with other sectors, leading to increased awareness and a higher priority accorded to the management of radiation exposure.

Problem statement/opportunity

An estimated 3.6 billion diagnostic radiology procedures are performed annually in the world and about 10% of these are performed on children. The use of radiation in medicine has expanded worldwide and, although this has resulted in a substantial improvement in health care, the inappropriate handling of radiation technologies can also introduce potential health hazards for patients, health workers and even the public. In 2016, lung cancer due to exposures to radon caused an estimated 57 000 lives to be lost, with a further 2 million years lost due to disability; and 55 500 deaths resulted from skin melanomas due to exposure to ultraviolet radiation – a conservative estimate, as many other skin cancers are not reported. Many countries still lack the necessary regulatory and policy frameworks and institutional capacities to enable them to assess and prevent the health risks of radiation. Health sector engagement is important in order to identify risks and coordinate with other sectors and stakeholders, as necessary, to identify and implement effective interventions.

Unique role and added value of WHO

WHO is uniquely positioned to lead global efforts on radiation safety in order to protect human health through (1) developing and implementing international safety standards for ionizing and non-ionizing radiation; (2) the Organization’s power to convene radiation stakeholders on matters related to health and ability to influence public health policies; (3) use of strong and complementary partnerships with relevant organizations, such as ILO, IAEA, FAO, UNEP, WMO and ITU to support coordinated actions. The Secretariat has a global mandate as it provides support to all regions and countries regarding radiation protection issues, and preparedness and response to radiation emergencies.
Activities and outputs for the period 2018–2019

The WHO Secretariat will focus on the following actions:

• Provide standards, norms and guidance on protection against radiation health risks arising from ionizing and non-ionizing radiation exposure to the public, patients and workers for planned, natural, and accidental exposures

• Develop and disseminate tools to support countries in the area of radiation and health

• Support the implementation of priorities delineated in the Bonn Call for Action in the context of the WHO Global Initiative on Radiation Safety in Health Care Settings

• Coordinate activities of the following global expert networks: WHO’s Radiation Emergency Medical Preparedness and Assistance Network (REMPAN) and the global biodosimetry network, WHO BioDoseNet and contribute to IHR implementation in the area of radiation emergencies

• Develop and advance the health risk assessment and research agenda regarding non-ionizing radiation (electromagnetic fields and ultraviolet radiation).

Priority intervention areas in key settings

B7. Cities

Change objectives

• Public health criteria are incorporated into sectoral and urban policies, city master plans and urban mobility plans, and specific interventions are implemented to ensure health protection from major risks to health in the urban environment.

• The evidence base on the impacts of sectoral policies on health in the urban context and the interventions to address these impacts is strengthened and provides a solid basis for action.

• Intersectoral planning and collaboration are facilitated at all levels with sufficient resources and programming directed for the above activities.

Problem statement/opportunity

Fast-growing urban populations are placing an increasing demand on limited housing, food and other resources to meet basic needs, and are putting pressure on transport systems and other urban infrastructure. Major technological and economic shifts are modifying the types of available jobs, generating uncertain prospects for particular populations. More than 90% of people living in urban areas are exposed to polluted air. More and more urban dwellers are leading sedentary lifestyles, contributing to the rise in obesity and noncommunicable diseases, while rising temperatures due to

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climate change strengthen vectors of infectious diseases. Persistent and, in some places, growing inequality limits access to basic health care services. A focus on health is key to tackling all of these challenges, and many more.

Strategic decisions made in sectors such as housing, transport, energy, land use planning, urban agriculture and waste management all have significant impacts on the health of urban populations, as do policies related to education and human services. Sound decision-making can lead to substantial health benefits, and can save costs, unlock economic progress and foster environmental resilience. For many global agendas to succeed – including the Sustainable Development Goals, the 2015 Paris Agreement and the New Urban Agenda – key actors and stakeholders in urban planning, governance and finance must incorporate health as a central consideration in their decision-making processes. Expected health impacts should be assessed during the development of urban policies. Health outcomes and health equity should be key indicators used in monitoring the impact of those policies.

The participation of the health sector in the policy-making process is essential. Economic and health costs and benefits need to be modelled and anticipated when taking health-relevant decisions to ensure that the right arguments are provided to the health and other sectors. Such information should be used effectively to support sector policies that prevent diseases and promote health; to strengthen capacity to analyse, evaluate and communicate health co-benefit opportunities from policies and interventions across sectors; and to help to bridge sectoral decision-making silos and thus enhance intersectoral cooperation.

**Unique role and added value of WHO**

WHO can add value by enhancing the health sector competencies and leadership to influence other sectors and create demand for health-enhancing urban policies and interventions at both national and subnational levels. WHO can also influence and complement the work of other United Nations agencies, governments, sectors and non-State actors.

WHO will focus on the development and adaptation of normative tools and guidance in order to incorporate health arguments in all policies at the local level, including a suite of procedural tools (e.g. health impact assessment; guidance for developing local communications) and quantitative risk and economic assessment tools for air pollution and solutions for its reduction (e.g. AirQ+¹ and HEAT),² combined with strengthening public health oversight and leadership.

WHO will also promote linkages with health programmes to influence investment in improving urban environments for health and health equity, particularly for vulnerable groups and least developed countries, as well as cities undergoing rapid and unplanned urbanization. Existing

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monitoring efforts related to relevant urban sectors (e.g. transport – SUM4All; Water and sanitation – GLAAS\(^1\)) to enhance understanding, planning and monitoring of urban health through disaggregated and robust information, also minimizing the burden of data collection for countries and cities.

**Activities and outputs for the period 2018–2019**

- Test a model process, and develop case studies placing the health sector in a leadership position with the capacity and tools to demonstrate to the public and decision-makers the full range of health and climate benefits that can be achieved from implementing sustainable urban policies. This will be accomplished with the finalization of the two first pilot cities under the Urban Health Initiative, aimed at creating demand for action against air and climate pollutants, through strategies that can yield the largest health co-benefits.

- Develop and adapt quantitative comparative risk assessment tools to support the estimation of the health impacts of environmental risks (e.g. AirQ+) and sectoral policies (e.g. transport, land-use and energy), and apply them in different contexts globally.

- Develop technical and training materials as well as curricula for public health practitioners and health professionals on urban health and multisectoral work.

- Work jointly with key other United Nations agencies and major networks to mainstream health considerations into sectoral policy planning, implementation and monitoring. For instance, WHO, together with UN-Habitat, is developing support and knowledge on how to integrate health considerations into urban and territorial planning.

- Provide evidence on major health risks in urban areas and identify and measure the health benefits of key housing upgrading interventions and examples of good practice.

- Prepare for scaling-up activities, building on the work of the coming two years.

**B8. Households**

**Change objectives**

Save lives, reduce disease, increase quality of life, help to mitigate climate change and contribute to the achievement of a number of Sustainable Development Goals through improved housing conditions.

**Problem statement/opportunity**

Homes can expose people to a number of risks that can lead to important health impacts. Those risks include inadequate water, sanitation, and hygiene, the use of polluting stoves for cooking, indoor dampness causing childhood asthma, and unsafe homes or activities in the home that can cause injuries. Crowding has been associated with increased death rates from tuberculosis, and children’s exposure to lead with cognitive impairment. Furthermore, residential buildings are important emitters of greenhouse gases fostering climate change. Today, about 828 million people

live in slums and the number keeps rising. Housing is becoming increasingly important to health due to demographic and climate change. The world’s urban population will double by 2050 and will require adequate housing solutions.

The development and implementation of healthy housing strategies can significantly reduce current risks to population health and well-being. In line with WHO’s intersectoral work to create health-promoting environments, addressing these risks requires a comprehensive approach towards the housing sector into which all aspects of housing are integrated – including vital infrastructure, the physical dwelling, the use of the dwelling, and the location of the dwelling. Housing risks often cluster together, and simultaneously addressing them is often more cost-effective. Housing has therefore been targeted as an entry point in a multifactorial approach.

**Unique role and added value of WHO**

Ensuring healthy and safe dwellings for all requires evidence and action from multiple sectors. WHO’s health and environment work covers a large variety of the housing-related risk factors (including water and sanitation, and indoor air pollutions), providing leadership in ensuring that health considerations inform housing regulations, developing norms and guidance (e.g. WHO healthy housing guidelines) and building capacity to promote, implement and evaluate Health-in-All-Policies.

**Activities and outputs for the period 2018–2019**

- Developing WHO housing and health guidelines, building upon existing WHO guidelines relevant for housing (including indoor air quality, water and sanitation) and formulating new recommendations on other key issues such as: indoor temperature, crowding, accessibility of dwellings, home injuries, proximity of housing to walking and cycling infrastructure.

- Support implementation of the guidelines, by developing an implementation strategy comprising tools and strategies for translating normative housing standards into national action (e.g. housing and health plans; collection of case studies on healthy housing interventions; and model housing legislations and regulations with a high-equity co-benefit at urban level).

- Provide evidence on major health risks in slums and identify and measure the health benefits of key housing upgrading interventions and examples of good practice.

- Advocate for prioritized action on the health impacts of housing policies with key other United Nations agencies (including UN HABITAT and UNECE). Currently, WHO is working towards integrating health standards into the Urban and Territorial Guidelines of UN HABITAT.

- Development of concrete communication materials on key housing recommendations for health reaching out to various stakeholders, from policy makers to users.

**Initiatives on vulnerable groups**

**B9. Children's environmental health**

**Change objectives**

- All health professionals who deal with children sensitive to “environmental prevention”.

- Everyone aware that children’s health and development can be protected using available environmental solutions.
• Protecting children from emerging, under-recognized environmental threats such as endocrine disruptors.

**Unique role and added value of WHO**

Reducing environmental risks could prevent more than a quarter of the 6.6 million deaths of children under 5 years. Childhood deaths from key risks range from nearly 600,000 preventable deaths annually from air pollution-related diseases to about 200,000 deaths from malaria cases preventable through environmental management. WHO can provide leadership on policy issues; it can develop tools for health professionals and other relevant actors, based on evidence syntheses and solutions developed in the framework of WHO’s work on environmental risk factors; it can advocate for their implementation; and it can provide support to countries to advance this critical agenda.

**Activities and outputs for the period 2018–2019**

WHO — in collaboration with partners at United Nations level, WHO collaborating centres, non-State actors and academia – is continuously working in the following areas:

- Awareness-raising about the impact of environmental risks on child health and associated solutions in alignment with the Sustainable Development Goals
- Development of technical and training materials to help health professionals recognize and prevent childhood diseases related to key environmental risks, such as air pollution
- Health sector capacity building to prevent childhood diseases of environmental origins
- Advocacy for primary prevention of environmental health risks to be included in child-health programmes and strategies as appropriate
- Development of pilot interventions aimed at reducing exposure and decreasing the burden of disease in children.

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