



**World Health
Organization**
REGIONAL OFFICE FOR
Europe



EUROPEAN ENVIRONMENT
AND HEALTH PROCESS

ENVIRONMENTALLY SUSTAINABLE HEALTH SYSTEMS

Report of a meeting in Bonn, Germany

11-12 November 2015



**World Health
Organization**

REGIONAL OFFICE FOR **Europe**

Environmentally Sustainable Health Systems

Meeting Report

**11–12 November 2015
Bonn, Germany**

ABSTRACT

The WHO Regional Office for Europe supports Member States' efforts towards environmentally sustainable health systems (ESHS). Participants nominated by Member States, external experts and WHO staff met in Bonn, Germany, on 11-12 November 2015, to discuss the main elements of a strategic approach towards ESHS. The discussions were supported by a discussion draft elaborated by the WHO Regional Office for Europe, as well as an evidence summary, case studies and presentations from experts. Country participants presented a great variety of national examples of environmental sustainability actions in health systems and highlighted their willingness to share information on these and other existing case studies. The participants highlighted the importance of ESHS and the relevance and timeliness of the draft strategic document. This draft will be further reviewed to incorporate inputs from Member States, with a view to use it as a basis for including the topic of ESHS in the relevant policy processes, particularly the next Environment and Health Ministerial Conference, in 2017, and the Regional Committee in the same year. The WHO Regional Office for Europe will support this process with evidence, and act as convener in collaboration with Member States.

Keywords

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Scope and purpose of the meeting

Health systems are fundamental for improving, maintaining and restoring health. Good health contributes to economic growth and, in turn, societal well-being. However, secular trends of rising urbanization and population ageing, as well as rising health care costs and the financial crisis have raised concerns about the sustainability of health systems in Europe. While such debate usually focuses on the availability of financial resources, the financial sustainability of health systems is – as in other complex human systems – inextricably linked to their social and environmental sustainability.

Creating ESHS can yield benefits for patients, the health care workforce, health services, financing and the environment. ESHS also support many of the priorities set forth in the *Health 2020* policy framework¹, in particular through the reduction of pollution and waste, a more efficient use of resources, and the promotion of health promoting environmental practices. *Health 2020* makes explicit the commitment of countries in the WHO European Region to eliminate the most significant environmental threats to human health, to create supportive environments and resilient communities, and tackle Europe's major disease burden of noncommunicable and communicable diseases. It also calls for the local promotion of services for environment and health and the encouragement of the health sector to act in a more environmentally responsible manner. Moreover, a number of “win-win” situations can be achieved through partnerships between the health and environment sectors.

The WHO Regional Office for Europe held a technical workshop in Bonn, Germany, on 27–28 August 2013 in order to promote technical discussions and the sharing of lessons learnt. Following up on that work, a subsequent meeting held in Bonn on 11-12 November 2015 focused on identifying and discussing a strategic approach to fostering sustainability in health systems. The meeting was attended by representatives of Member States, as well as technical experts in the relevant technical areas and partners such as United Nations agencies and nongovernmental organizations.

The scope of the meeting was to discuss the main elements of a strategic approach towards ESHS, namely:

- the environmental pressures and impacts of health systems in the WHO European Region;
- the benefits for patients, health systems and the environment of considering and accounting for environmental sustainability;
- a vision for environmentally sustainable health systems;
- key actions to foster environmental sustainability in health systems;
- the technical assistance needed by Member States striving to enhance environmental sustainability in their health system; and
- the role of different partners in delivering this technical assistance.

¹ <http://www.euro.who.int/en/health-topics/health-policy/health-2020-the-european-policy-for-health-and-well-being/about-health-2020>

Brief summary and conclusions of the meeting

In a meeting convened by the WHO Regional Office for Europe, participants nominated by Member States, external experts and staff from the Regional Office met in Bonn, Germany, to discuss the main elements of a strategic approach towards ESHS. A discussion draft elaborated by the Regional Office, with the main elements of the proposed strategic approach under discussion, was presented and debated. The discussions on the strategic document were supported by an evidence summary, several case studies and presentations from experts in the field. The participants highlighted the importance of ESHS and deemed the strategic document positive, relevant and timely. Furthermore, the country participants and experts considered the proposed vision and the categories of actions towards environmental sustainability in health systems listed in the document adequate. Country participants presented a great variety of national examples of environmental sustainability actions in health systems, spanning several areas, and highlighted their willingness to share information on these and other existing case studies. They also called for a continuation of technical work by the Regional Office, specifically the analysis and dissemination of best practices by areas, as well as the identification of knowledge gaps and research priorities, and the facilitation of the exchange of information and experiences among Member States.

The main conclusions of the meeting were:

- Participants will provide further inputs to the strategic document and evidence summary.
- The strategic document will provide the basis for promoting the topic of ESHS in the relevant policy processes, including the next Environment and Health Ministerial Conference, in 2017, and the Regional Committee in the same year.
- A further meeting with participants nominated by Member States will be held by the end of 2016. An offer was made to host this meeting in Kazakhstan.
- The WHO Regional Office for Europe will conduct the technical work necessary to support this process with evidence, and act as convener in collaboration with Member States.

Policy context

Although there is a long history of intersectoral working between environment and health, the shift towards a health systems perspective and the focus on the environmental sustainability of health systems adds an important new dimension.

The topic of ESHS fits well within the scope of the European Environment and Health Ministerial Process², namely reducing the adverse health impacts of environmental threats in the WHO European Region. ESHS aligns with one of the eight themes (‘global environmental change’) of the roadmap to the next ministerial conference, to be held in 2017. There is potential for ESHS to be one of the political outcomes of the conference. There are further links to other key policy processes, particularly the 2030 agenda³ for sustainable development and Health 2020⁴.

The values underpinning the concept of ESHS have a long policy history, stretching back to the Alma-Ata declaration (1978), and more recently to the Tallinn charter (2008). Health 2020

² <http://www.euro.who.int/en/health-topics/environment-and-health/pages/european-environment-and-health-process-ehp>

³ <https://sustainabledevelopment.un.org/post2015/transformingourworld>

⁴ <http://www.euro.who.int/en/health-topics/health-policy/health-2020-the-european-policy-for-health-and-well-being>

(2013) has stressed that health, the economy and the environment are inextricably linked. In the face of changing population health needs, demographic change and mounting financial and environmental pressures, promoting sustainability within health systems will increasingly involve close collaboration with the environmental sector, and consideration of environmental sustainability within the scope of health system activities. The focus needs to be on actions that benefit both health and the environment, improving the financial efficiency of health systems in the process.

Strategic discussion document

A draft strategic document (*Environmentally sustainable health systems: a strategic document*) was produced for discussion and presented at the meeting. The vision proposed in the document is that health systems perform their functions “while minimising their negative impacts on the environment and leveraging opportunities to restore and improve the environment to the benefit of the health and well-being of current and future generations”. The document proposed one overarching action, namely that Member States develop and adopt a national environmental sustainability strategy for health systems. This is accompanied by 10 examples of supporting actions:

1. promoting intersectoral action for the environment and health
2. increasing community resilience and promoting local environmental and social assets
3. engaging the health workforce as an agent of sustainability
4. strengthening public health, environmental and occupational health services
5. promoting innovative models of care
6. creating incentives for change
7. sustainable procurement
8. promoting access to, management of, and efficiency and security in the use of resources
9. managing and minimising waste and hazardous chemicals
10. reducing emissions of air pollutants and greenhouse gases and increasing resilience.

The WHO Secretariat stressed that the recommendations contained in the strategic document and the document itself must be flexible enough to fit countries of any development status. However, when it comes to implementation, specific national and subregional realities must be taken into account.

The strategic document was supported by a draft policy summary. The purpose of that policy summary was to provide Member States with illustrative evidence from research regarding the environmental impact of health systems in the European Region; the potential benefits of fostering environmental sustainability within health systems; and the barriers to and facilitators of change. The findings of the literature review indicated that although there are several gaps in the evidence base that require further research, there is a strong rationale for seeking to improve the environmental sustainability of health systems. These findings are consistent with previous literature reviews on the topic by the WHO Secretariat, as well as the evidence from numerous case studies from Member States across the European Region⁵.

⁵ <http://www.euro.who.int/en/health-topics/environment-and-health/Climate-change/publications/2013/greening-health-systems.-report>

Examples of action on ESHS from Member States

Member States shared examples of actions from their own countries which had the potential to improve the environmental sustainability of health systems. This highlighted that activities that can be expected to foster environmental sustainability in health systems are already underway across the European Region, motivated by a wide range of concerns, environmental and otherwise. In some cases, there were activities that were not explicitly recognized as being environment-protecting in nature or purpose, but which could nonetheless contribute towards sustainability (for example, adoption of telehealth and telecare technologies). The actions described were highly diverse, and included:

- national health systems strategy on environmental sustainability;
- intersectoral action;
- health care workforce capacity building and training;
- mobility management and low carbon transportation;
- use of telemedicine, telecare, e-health and m-health to reduce patient/staff travel;
- sustainable procurement;
- energy efficiency and conservation, including use of renewable sources, combined heat and power, and others;
- environmentally sustainable design, planning and construction of new health care facilities, and renovation or retrofitting of existing ones;
- water conservation and management of wastewater;
- reducing pharmaceutical waste;
- health care waste management (hazardous and non-hazardous);
- minimizing use of hazardous chemicals and polluting anaesthetic gases; and
- greenhouse gas (GHG) emissions accounting.

This list is not intended to be exhaustive, and only includes some of the wide range of activities in Member States related to ESHS. Some of these activities were presented by participants from Member States to the plenary. These specific examples are summarized below.

Health care waste management has been a focus of action in Armenia, which implemented a new medical waste management system from 2008 onwards, and has been monitoring the impact of this.

Belarus has taken a number of steps to minimise wasteful use of pharmaceuticals, including expanding the list of drugs that are only available by prescription. There have also been measures to encourage the use of equipment with lower energy requirements in health facilities.

A number of initiatives in the Czech Republic could contribute to environmental sustainability, including some initiatives which are not explicitly environmental in nature. For example a national e-health strategy has the potential to reduce health-related travel and associated greenhouse gas emissions. Similarly, e-health technologies are increasingly being used to deliver health services to island communities in Croatia.

In France, a major priority is controlling the growth of antibiotic resistant bacteria. Joint work between the ministries of health and environment is underway to tackle the health and environmental threats and to improve the way antibiotics are used. There has also been significant concern regarding the health impacts of global environmental change, particularly after the heatwave of summer 2003 led to a large number of deaths in the country.

In Hungary, a survey of hospitals has been conducted to collect data on energy use, water consumption, waste management and other issues. A major programme of hospital construction supported by the European Union is being used as an opportunity to develop more sustainable facilities, with improvements being sought in terms of energy use, waste management and water safety.

A number of legislative and regulatory tools have been used in Kazakhstan to improve the environmental impact of health systems and other sectors. This includes regulations applying to the construction of facilities, and reporting requirements in relation to hazardous waste generation. Action has also been taken to modernize hospital incinerator technologies, and to strengthen facilities for treating hospital wastewater.

Efforts in Kyrgyzstan have focused on using energy-saving technologies and renewable energy sources to provide health facilities with an uninterrupted power supply. This is seen as being particularly valuable in remote rural areas where conventional energy sources are not always reliable, particularly in emergency situations. A national programme has seen primary health care centres in remote areas being equipped with photoelectric and hydroelectric technologies. A number of energy-saving measures have also been introduced, with reported financial returns on investment within one to seven years. There has also been investment in renewable energy sources in Bosnia and Herzegovina, where some hospitals are now using geothermal heating.

Health care waste management has improved significantly in Serbia as a result of a seven-year programme including technical assistance from the European Union. Central treatment points in each district now responsible for collecting and treating infectious waste from other facilities. Close cooperation between the health and environmental ministries has been key to the success of this program.

Sweden has embarked on multiple initiatives to improve the environmental sustainability of health systems. These include adoption of sustainable procurement processes by regional hospitals; wastewater treatment plans to reduce the presence of pharmaceutical compounds, antibiotic resistant bacteria and toxic chemicals in wastewater; switching to renewable energy sources for hospitals; and a scheme to motivate the population to return unused medicines to pharmacists for proper disposal. In addition to these, a national pharmaceutical strategy has been operational for several years with broad participation from many stakeholders. Specific goals are set and commitments from the stakeholders are made as part of a common endeavor. An explicit goal of this strategy is to minimise the environmental impacts of pharmaceuticals, including by reducing wastage of drugs, and through encouraging voluntary control of emissions from pharmaceutical factories (including active pharmaceutical ingredients and resource efficiency). This is also in line with the Swedish Milestone Target of increased environmental consideration in pharmaceutical legislation within the European Union and internationally.

The United Kingdom of Great Britain and Northern Ireland has taken a whole-system approach towards environmental sustainability, with a national sustainable development strategy for the health system launched in 2014, and a range of activities overseen by a dedicated sustainable development unit embedded within the health system. Implementing the sustainable development strategy has involved extensive engagement and collaboration with organizations across the health system, including service providers, policy-makers, regulators, educators and industry. A major focus in the country has been reducing emissions of greenhouse gases. In 2015 the health system succeeded in meeting the first target in a national carbon reduction strategy, reducing its carbon footprint by 10% (from a 2007 baseline).

Uzbekistan has deployed a number of regulatory measures, including a major programme to reduce the use of ozone-depleting substances (for example cooling agents).

There are also examples of action at the international level. The European Union has funded several projects in this area, including projects aiming to explore options for achieving zero carbon hospitals (the ‘RES-Hospitals’ project); to understand factors that influence the uptake of innovative energy solutions in health systems (the ‘Energy4Health’ project); and to encourage outcome-based sustainable procurement in the health sector (the ‘EcoQUIP’ project).

Feedback on the draft strategic discussion document

Participants discussed the approach taken in the draft strategic document, and the feasibility of developing a national/subnational environmental sustainability policy for the health system.

Participants concurred on the importance of the issue and the relevance and timeliness of the draft strategic document. Participants were positive about the overarching vision for environmentally sustainable health systems described in the draft strategic document, and it was noted that the 10 key actions proposed in the document correlate well with the main areas of activity raised by participants during discussions.

Participants stressed that in the final version of the strategic document, the vision statement would have to strike a careful balance between ambition and feasibility, particularly given different national circumstances and situational baselines within the region. Some participants argued that the strategic document should be clearer with regards to the specific actions that are needed at the national level, with practical examples and advice about how to get the maximum environmental return for investment. There could also be some value in distinguishing between short- medium- and long-term actions, such that the longer-term aspirational vision can be complemented with concrete goals to be working towards now.

There were specific proposals from some participants regarding issues that could be given greater emphasis within the document. These included:

- identification of issues that could benefit from multilateral programmes operating across countries, for example on procurement, pharmaceutical manufacturing, and research;
- the need to establish a cross-ministerial and intersectoral steering body at the national level, with some level of accountability for overseeing strategic action;
- the importance of educating professionals about the environmental impact of health systems, including both clinical and nonclinical staff;
- the need for more research, as well as a prioritization of research topics within the area;
- metrics that could be used to measure progress;
- any available data on economic implications for financial return on investment; and
- ESHS as a means of implementing health 2020.

The working groups highlighted the importance of presenting evidence-based arguments that could help harness political momentum, and specifically to present relevant facts and figures in the strategic document. It was emphasized, however, that the addition of these facts and figures should not lengthen the document, but rather substitute parts of it partially addressed in other WHO documents, for instance with regard to health systems functions. The working groups also requested the draft document to be circulated for comments at the national level.

Priorities for action

Participants agreed that the ten action points cover the most important issues. Not all of these points are equally important for all Member States; and thus each country can select a number of the priorities. The relative level of importance given to specific issues will clearly differ in each country and subregion. Participants from Belarus, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Ukraine and Uzbekistan conducted a prioritization exercise which indicated that in these countries, issues such as funding; water, sanitation and hygiene; health care waste management; and sustainable procurement may be the most urgent priorities.

In countries where an existing legal framework of milestones for greenhouse gas reduction already exists across all sectors (such as in Sweden and the United Kingdom of Great Britain and Northern Ireland), there is an opportunity to make progress on this issue by ensuring that health systems play a full part in delivering national commitments. Mitigation of climate change can therefore be expected to be a priority for action in some countries. However, it was observed that climate change may not be the best point of entry into the concept of environmentally sustainable health systems in all countries, as there are other issues where the health impacts of environmental damage are more visible and more immediate.

Some participants argued that in the current financial environment, actions which deliver financial savings as well as environmental benefits should be prioritized, with an obvious example being improved energy efficiency.

The representative of the United Kingdom of Great Britain and Northern Ireland noted that the approach taken at the national level in England has been less concerned with the identification of specific priorities for action, and has focused instead on developing and communicating an overarching strategy, building networks and coalitions to guide and implement change, and providing baseline data against which progress can be measured.

With regard to elements insufficiently addressed, the working groups mentioned specifically: building public awareness and political will, and the crucial role of health workforce education.

Barriers and enablers

It was recognized that making progress on this agenda would require a number of potential challenges to be overcome:

- First and foremost, there is a need to build political and technical leadership at all levels.
- Successful intersectoral cooperation will be crucial, given that this topic straddles traditional boundaries between ministries of health and the environment.
- Given financial constraints, there is a need for robust evidence on anticipated financial costs and benefits.
- Low levels of awareness of the issue among health professionals, policy-makers, international donors and sponsors, and the general public will need to be tackled through active engagement and communication.
- The role of health workforce education was seen as being particularly important.
- Better data will be fundamental to making the case for change and identifying priorities for action at the national level.
- Health system leaders will need to create financial and other incentives to encourage service providers to implement changes.

- Legislative change may be necessary in some countries, along with strengthening of enforcement mechanisms.

There was widespread agreement that adoption of a national environmental sustainability policy for health systems would be a key enabler of change within Member States. To be successful, such policies would need to provide a clear framework for action and options that are feasible in the local context, and would need to be based on compelling evidence and relevant practical examples. Implementation could then be based on the mainstreaming of environmental sustainability in existing strategies and plans, the establishment of new ones, or both.

A consistent message from participants was that there are several areas where international coordination and facilitation could support action at the national level. Examples given included the following:

- establishing a common platform for coordinating research activities on ESHS across the European Region, to avoid duplication and maximize shared learning;
- working with industry to encourage the development of innovative solutions;
- elaboration of technical guidelines and standards on specific issues such as sustainable procurement;
- reporting of performance indicators and benchmarking data, as well as sharing of information collection templates and checklists for case studies;
- creation of a database on the environmental footprint of a list of key products so that these do not need to be recalculated on a country-by-country basis; and
- creation of other online resources to support sharing of best practice and learning.

There was a clear appetite from Member States for international exchange of experiences and collaborative work at a multicountry or subregional level. Some participants asked whether the WHO or other multilateral institutions could play a role in supporting cooperation at this level, for example by creating mechanisms to improve collaboration between sectors and countries, bilaterally or in groups. In the case of Member States of the European Union, involvement from EU-level organizations was identified as being potentially beneficial. An example of an area where increased cooperation was identified as being potentially beneficial was in relation to the procurement of pharmaceutical products, where separate lines of work are currently in operation in a number of Member States.

Next Steps

The WHO Secretariat proposed that there should be a further meeting of Member States towards the end of 2016, with the objective of producing a final product on ESHS by the end of 2016 with support from all Member States in the European Region. It was suggested that there may be value in inviting wider partners to the proposed 2016 meeting with a view to exploring implementation, including international funding institutions. A tentative location for the next meeting was offered.

There was a clear need for further work on the strategic document to strengthen the evidence base on ESHS, particularly in relation to financial and economic considerations, as well as the inclusion of some form of success metrics. The secretariat will revise the draft strategic document based on the input from Member States during the meeting, with a view to circulating a revised draft in spring 2016, to be followed by a formal consultation process in summer 2016.

Participants were also encouraged to contact the secretariat with further suggestions and examples of relevant activities within Member States by writing to climatechange@euro.who.int.

The Secretariat outlined the next steps in relation with the European Environment and Health Process:

- presenting the discussions and results of this meeting in a taskforce meeting held in Skopje, Macedonia, 24-25 November 2015, in the context of the roadmap to the next ministerial meeting;
- incorporation of the comments from meeting participants and country inputs in the strategic document, with the possibility of a web-based consultation;
- finalization of the evidence policy summary;
- specific evidence review on the economics of environmental sustainability in health systems;
- a technical experts meeting in Bonn; and
- a Member State meeting to be held prior to Ministerial meeting, conditional upon funding availability.

Sweden made a specific request for further work on technical issues related to sustainable procurement. The representative of the country stated that environmental sustainability of health systems is a very important issue, and that Sweden would be particularly interested in working with other countries to make further progress in the area of sustainable procurement of pharmaceuticals and medical devices, including by working with countries that already have a background on this topic. This proposal was seconded by the United Kingdom of Great Britain and Northern Ireland. The WHO secretariat suggested an initial technical meeting on the matter in Sweden, which could be attended by representatives from the WHO European Centre for Environment and Health, and the WHO Division for Health Systems and Public Health. Whether this meeting will be held will be confirmed by the relevant Swedish counterpart in due course.

The Secretariat concluded by noting the merit of the WHO-led process on ESHS over the last three years, and remarked that the continuing success of this process promises to support health improvement and reduction in health inequalities across the European Region.

ANNEX I: Final programme

Wednesday, 11 November

- 08:30 – 09:00 Registration
- 09:00 – 09:15 Welcome (*Elizabet Paunovic, Srdan Matic and Hans Kluge, WHO*)
- 09:15 – 09:30 Introduction to the topic and scope of the meeting (*Bettina Menne, WHO*)
- 09:30 – 10:00 Tour de table: Introduction of participants
- 10:00 – 10:30 Session 1: The political context
- Health systems in the WHO European Region: today and tomorrow (*Hans Kluge, WHO*)
 - The European Environment and Health Process: bridging the agenda (*Srdan Matic, WHO*)
- 10:30 – 11:00 Session 2: The strategic approach
- Environmentally sustainable health systems: a strategic document (*Gerardo Sanchez Martinez and Martin Kraye von Krauss, WHO*)
 - Presentation of the review of evidence on the relations between health systems and environmental sustainability (*Chris Naylor, King's Fund*)
- 11:00 – 11:15 Questions and answers
- 11:15 – 11:30 Coffee break
- 11:30 – 12:45 Session 3: Experiences of selected European Member States and international agencies and other stakeholders
- Czech Republic (*Alzbeta Vichova, Ministry of Health*)
 - European Union: selected examples (*Angus Hunter, Optimat Ltd*)
 - Hungary (*Anna Paldy, National Institute of Environmental Health*)
 - Kazakhstan (*Marat Ismailov, Ministry of Health and Sholpan Zhakupova, Institute of Radiation Medicine and Ecology*)
 - Kyrgyzstan (*Artur Buyuklyanov, Centre of State Sanitary and Epidemiological Control*)
 - Serbia (*Branislava Matic Savicevic, Institute of Public Health*)
 - Sweden (*Kia Salin, Medical Product Agency*)
 - United Kingdom (*Sonia Roschnik, National Health Service*)
- 12:45 – 13:45 Lunch break
- 13:45 – 14:00 Introduction to the group work: Organization of the group work
- 14:00 – 16:00 Session 4: Discussing the ESHS framework
Introduction to the group work questions (*Martin Kraye von Krauss, WHO*)
- Group work questions:
- Can you share an example of a development that contributed to the

- environmental sustainability of health systems in your country?
- Can you share an example of measures taken in your country that benefited environmental sustainability, and strengthened the performance of the health system?
 - What would be your ideal vision of environmental sustainability in health systems?
 - What is your opinion on the viability of a national/subnational environmental sustainability policy for the health system in your own country?

Material:

- Working paper 6. Environmentally sustainable health systems: a strategic document;
- Background material B2: Towards environmentally sustainable health systems in Europe: a review of the evidence

16:00 – 16:15 Coffee break

16:15 – 17:00 Presentation of group results and discussion

Reception at the venue after the discussion closure

Thursday, 12 November

8:30 – 9:00 Summary of day 1 (*Gerardo Sanchez Martinez and Martin Kraye von Krauss, WHO*)

9:00 – 9:30 Global initiatives related to environmentally sustainable health systems:

- WASH for health care facilities. (*Bruce Gordon, WHO*)
- Sustainable procurement. (*Michaela Pfeiffer, WHO*)

9:30 – 11:00 Continuation of session 4: Discussing the ESHS framework
Introduction to the group work questions (*Gerardo Sanchez Martinez, WHO*)

Group work questions:

- What should be, in your opinion, the priorities on environmental sustainability throughout health systems in your own country?
- What are the likely barriers for implementation and enabling factors to overcome them?

Material:

- Working paper 6. Environmentally sustainable health systems: a strategic document;
- Background material B2: Towards environmentally sustainable health systems in Europe: a review of the evidence

11:00 – 11:15 Coffee break

11:15 – 12:00 Continuation of session 4: Discussing the ESHS framework

- 12:00 – 13:00 Presentations of the group work and discussion
- 13:00 – 14:00 Lunch break
- 14:00 – 15:00 Discussion and conclusions:
- Next steps
 - Mechanisms for collaborative work
 - Technical work 2016
 - Support from WHO
 - Countries or organizations volunteering to host the next meeting
- 15:00 – 15:15 Coffee break
- 15:15 – 15:30 Summary of the results of the two days discussion (*Bettina Menne, WHO*)
- 15:30 – 16:10 Conclusions and next steps (*Hans Kluge and Elizabet Paunovic, WHO*)
- 16:15 Closure of the meeting

ANNEX II: Final list of participants

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ANNEX III: Strategic discussion document draft

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ORGANISATION MONDIALE DE LA SANTÉ
BUREAU RÉGIONAL DE L'EUROPE

ВСЕМИРНАЯ ОРГАНИЗАЦИЯ ЗДРАВООХРАНЕНИЯ
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FOREWORD

Health systems, comprising all institutions and resources mandated to improve, maintain or restore health, are fundamental in achieving and maintaining societal health and welfare, as well as key factors for development and economic growth. They also represent a large share of the economy, globally and in most Member States of the WHO European Region, and employ large workforces, notably in health care. Taken as a whole, the health sector consumes considerable amounts of energy and resources and produces major streams of emissions and waste, either directly or through the goods and services it procures, uses and disposes of.

Ideally, an environmentally sustainable health system improves, maintains or restores health, while minimizing negative impacts on the environment and leveraging opportunities to restore and improve it, to the benefit of the health and well-being of current and future generations. Actions in stewardship, service delivery, resource generation and financing can contribute to these goals.

The WHO Regional Office for Europe has a clear policy mandate for action in this area. Health 2020, the Tallinn Charter (health systems for health and wealth) and the Parma Commitment to Act on Environment and Health provide a solid basis upon which to develop technical work, advocacy and support to Member States in policy development, adoption and implementation.

This document proposes a range of practical actions that can help Member States to further strengthen environmentally sustainable health systems.

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ABBREVIATIONS

- BMUB Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Germany
- EC European Commission
- EEHP European Environment and Health Process
- EHTF European Environment and Health Task Force
- EU European Union
- GDP Gross Domestic Product
- HCWH Health Care Without Harm
- IIATT-SPHS Informal Interagency Task Team on Sustainable Procurement in the Health Sector
- IPCC Intergovernmental Panel on Climate Change
- NHS National Health Service, England, United Kingdom
- NHS SDU National Health Service Sustainable Development Unit
- UNDP United Nations Development Programme
- UNEP United Nations Environment Programme
- UNFCCC United Nations Framework Convention on Climate Change
- WHA World Health Assembly
- WHO World Health Organization
- WMO World Meteorological Organization

EXECUTIVE SUMMARY

Health systems, comprising all institutions and resources mandated to improve, maintain or restore health, are fundamental in achieving and maintaining societal health and welfare, as well as key factors for development and economic growth. They also represent a large share of the economy, globally and in most Member States of the WHO European Region, and employ large workforces, notably in health care. Due to its size and specific processes, the health sector as a whole consumes considerable amounts of energy and resources and produces major streams of emissions and waste, either directly or through the goods and services it procures, uses and disposes of.

This entails direct and indirect environmental impacts, which have traditionally been addressed through compliance with progressively increasing regulatory demands. However, more and more frequently the health sector in many countries (including within the WHO European Region) is taking an active role in environmental stewardship efforts. This proactive stance can be explained through several factors: 1) Several environmental sustainability interventions can be directed towards tackling upstream determinants of health; 2) Environmental sustainability action can provide benefits for patients, providers and the health workforce, health systems' core functions, as well as decreasing environmental health risks; 3) Environmental sustainability can reduce costs and increase health systems resilience.

Moreover, the global context in the private and public sectors clearly tends to a mainstreaming of environmental sustainability into core organizational functions. The question is then, how to do so within the existing frameworks, core mandates and resource constraints.

The WHO Regional Office for Europe has a clear policy mandate for action in this area. Health 2020, the Tallinn Charter (health systems for health and wealth) and the Parma Commitment to Act on Environment and Health provide a solid basis upon which to develop technical work, advocacy and support to Member States in policy development, adoption and implementation.

Ideally, an environmentally sustainable health system improves, maintains or restores health, while minimizing negative impacts on the environment and leveraging opportunities to restore and improve it, to the benefit of the health and well-being of current and future generations. Actions in stewardship, service delivery, resource generation and financing can contribute to attain this goal. A first step in this process is a clear mandate in Member States, which could take the form of a National Environmental Sustainability Plan for Health Systems, developed through inclusive and transparent procedures. A "route map" could then establish mechanisms for progress, measurable through locally and nationally relevant indicators. Based on experiences in Member States and the scientific literature, the plan may include the following actions:

- promoting inter-sectorial action for the environment and health
- increasing community resilience and promoting local environmental and social assets
- engaging the health workforce as agent of sustainability
- strengthening public health, environmental and occupational health services
- promoting innovative models of care
- creating incentives for change
- sustainable procurement
- promoting access to, management of, and efficiency and security in the use of resources
- managing and minimizing waste and hazardous chemicals
- reducing emissions of air pollutants and greenhouse gases and increase resilience.

The WHO Regional Office for Europe can support Member States throughout the process, by acting as a convener, by collecting and assessing the evidence on the topic, by promoting research and development in this area and to provide methods and tools for country support and communication, and by developing framework strategic documents to be discussed by Member States at appropriate policy meetings.

INTRODUCTION

1. Health 2020, the European health policy framework, recalls that health, the economy and the environment are inextricably linked and that there are important opportunities to improve both health and the environment by striving to foster environmental sustainability through the activities of health systems (WHO Regional Office for Europe, 2013a).
2. Health systems are *“the ensemble of all public and private institutions and resources, mandated to improve, maintain or restore health.”* They *“encompass both personal and population services, as well as activities to influence the policies and actions in other sectors to address the social, environmental and economic determinants of health”* (WHO Regional Office for Europe, 2008). They are fundamental in achieving and maintaining societal health and welfare, as well as key factors for development and economic growth. (WHO Regional Office for Europe, 2008, 2015a).
3. Owing to their broad mandate and scope, health systems represent a large sector of the economy in most countries of the European Region of WHO. Government spending on health among the countries in the Region in 2012 was around 10.2% of GDP in European Union countries and 6.4% in the rest of the region (WHO, 2014a). Health care is a highly labour-intensive activity: in 2010 there were around 17.1 million jobs in the health care sector which accounted for 8% of all jobs in EU-27 (EC, 2012).
4. Partly due to its size, but also to its specific processes and operations, the health sector as a whole – encompassing great internal variability – is a sizeable consumer of energy and resources and a major producer of emissions and waste, with associated direct and indirect environmental impacts. Therefore, in today’s world, health systems cannot separate themselves from their responsibility towards environmental sustainability.
5. Thinking on the environmental sustainability of private and public organizations has evolved significantly over the past fifty years, driven forward by changes in the way society perceived the relationship between activities in the private sector and the environment. For many years, the central concern was about minimizing the negative impacts of human activities on the environment, or doing less harm, and innovation was driven by the need to comply with externally imposed environmental regulations. This changed in the 1990s when the consensus began to emerge, that in addition to being accountable to shareholders for profits, responsible companies also needed to be accountable to society for the social and environmental impacts of their activities. Thinking evolved further in the 2000s, as it became accepted that in addition to being a matter of social responsibility, environmental sustainability was also a matter of competitive advantage: efforts to foster sustainability often generate added value for the core activities of the organization.
6. The case of environmental sustainability in health systems, however, differs from that in other organizations in one crucial aspect, namely the trade-offs that are not possible in the name of environmental sustainability. In most public and private large organizations, short-term trade-offs between certain core goals (e.g. profits or return on investment) and environmental sustainability are possible in the context of long-term planning and operational management. However, no trade-offs can be accepted between environmental sustainability and core health systems functions performance. Instead, the emphasis should be placed on win-win solutions whereby environmental sustainability actions reinforce health systems functions.
7. Health systems in the European Region have been taking important measures to reduce their environmental impacts for decades, mainly motivated by the need to comply with environmental regulations. Furthermore, in recent years, health systems in many countries (including within the WHO European Region) have taken an active role in environmental stewardship efforts (WHO/HCWH, 2009).

Increasingly, the driving force for pursuing environmental sustainability in health systems stems from a recognition of the synergies that exist between health and environmental sustainability. For example, while the intent of health professionals who promote active modes of transportation may be to increase levels of physical activity, their efforts will also yield clear benefits to the environment. In summary, health systems can benefit from integrating the pursuit of environmental sustainability action into their core functions, thus taking advantage of key opportunities.

8. The mandate for environmental sustainability of health systems in the European Region is solidly supported by policy documents and declarations.
 - The synthesis report of the United Nations Secretary-General on the Post-2015 Sustainable Development Agenda “The Road to Dignity by 2030: ending poverty, transforming all lives and protecting the Planet” highlights that every sector has the responsibility to contribute to the Sustainable Development Goals (SDGs). For health systems, this entails not only working towards health SDGs, but also its sectorial contribution to the achievement of other SDGs.
 - Health 2020: a common comprehensive policy framework agreed upon by the fifty-three Member States in the WHO European Region in 2013. With regard to environmental risks, sustainability and resilience, Health 2020 calls for the local promotion of services for environment and health and the encouragement of the health sector to act in a more environmentally responsible manner.
 - The Tallinn Charter: Health Systems for Health and Wealth, where Member States of the WHO European Region recognize the contribution of improved health to social well-being and emphasized the importance of both improving and being accountable for the performance of their health systems.
 - The Parma Commitment to Act on Environment and Health: In earlier years Ministers for Health and the Environment, had endorsed calling for Member States to “collaborate to increase the health sector’s contribution to reducing greenhouse gas emissions and strengthen its leadership on energy- and resource-efficient management and stimulate other sectors, such as the food sector, to do the same”.
9. Moreover, the importance of environmental sustainability is explicitly highlighted in the document outlining the strategic priorities of the WHO Regional Office for Europe for strengthening health systems (WHO Regional Office for Europe, 2015b). Based on this mandate and its ongoing background technical work in this area, WHO can support Member States in this process.
10. This strategic discussion document addresses the environmental sustainability aspects of health systems and how their environmental sustainability can support their social and economic sustainability. It does not aim to address health systems’ social and economic sustainability issues *per se*. The document is based on the notion that health systems can benefit from implementing and mainstream environmental sustainability action across their core functions, as well as playing a key role in promoting opportunities for health. The sections which follow are organized into a vision, the links between environmental sustainability and health systems functions, and actions to implement and mainstream environmental sustainability in health systems, strategies for change management, and next steps.

VISION

11. Beyond its intrinsic value, the environment contributes to social well-being by providing the natural resources and ecosystem services that fuel economic development and enable the achievement of wealth. The activities of health systems inevitably result in positive and negative impacts on the environment within which they are embedded.
 - 1.

12. Beyond reducing damage or harm, environmental sustainability implies achieving simultaneous improvements in human and environmental well-being. Fostering environmental sustainability in health systems is both a responsibility and an opportunity, and is consistent with the values of the European health policy framework Health 2020. Therefore, Member States aspire to a vision whereby
2.
13. Therefore, Member States aspire to a vision whereby **[health systems can improve, maintain or restore health, while minimizing negative impacts on the environment and leveraging opportunities to restore and improve the environment to the benefit of the health and well-being of current and future generations]**.

LINKING SUSTAINABILITY AND THE HEALTH SYSTEMS FUNCTIONS

14. In previous technical consultations convened by the WHO Regional Office for Europe, experts in the field discussed the relationships between environmental sustainability and the four basic functions performed by health systems⁶ (WHO Regional Office for Europe, 2013b), which are: stewardship, financing, service delivery and resource generation (WHO, 2000; WHO Regional Office for Europe, 2008). The paragraphs that follow provide a brief description of each of these functions, explaining how each of them relates to environmental sustainability⁷.
15. **Stewardship:** Ministries of health set the vision for health systems development and have the mandate and responsibility for legislation, regulation and enforcement of health policies, organizing health systems, as well as monitoring and evaluating their performance (WHO Regional Office for Europe, 2008). They are also responsible for establishing partnerships and leading intersectoral actions to improve health and reduce inequalities, and, where relevant, implementing multilateral agreements, including those pertaining to the environment⁸.
16. Community engagement and empowerment, partnerships, transparency and accountability are central to efforts to foster environmental sustainability. It is through the stewardship function that: 1) environmental sustainability goals for the health system are established and sustainability policies are adopted; 2) the implications for service delivery, financing and resource generation are determined; 3) implementation and performance are evaluated, 4) intersectoral partnerships to foster environmental sustainability are established, and 5) communities are engaged in co-creating the transition process.
17. **Health service delivery:** Health services include all services dealing with the diagnosis and treatment of disease, or the promotion, maintenance and restoration of health (WHO Regional Office for Europe, 2008). The manner in which organizations in the health system choose to deliver health services will have important bearings on environmental sustainability. At the highest level, choices such as how to organize and coordinate levels of care between primary, secondary and tertiary care, choices concerning the role of the community, as well as choices on the introduction of innovative approaches such as e-health will all have an impact on environmental sustainability. At the facility level, the way in which facilities are managed, the way in which waste is disposed of, or the way in which health personnel, patients and goods are transported will all have an influence. At the clinical level, the choice of the interventions to perform and the procedures used to perform them will have important ramifications.
18. An important trend in several Member States of the Region is a shift away from in-patient treatment, towards an increased role for primary care, ambulatory care, community based care and innovative approaches such as e-Health. As these models of care could potentially be more environmentally benign,

⁶ A group of experts, representatives from Member States and stakeholders gathered in Bonn in August 2013 to discuss at the first technical meeting on “greening health systems” the characteristics that define an environmentally sustainable health system. It was proposed to integrate environmental sustainability into the four health system functions.

⁷ All the process leading to the 2013 and the 2015 meetings on environmentally sustainable convened by WHO EURO has been underpinned by comprehensive reviews of the evidence, including conventional scientific literature, grey literature and case studies. The latest summary of the evidence is compiled in the background document “Towards environmentally sustainable health systems in Europe: a review of the evidence” (C. Naylor, unpublished)

⁸ A comprehensive list of Multilateral Environmental Agreements (MEA) is available at the United Nations Portal on MEAs (<http://www.informe.org/>)

the transition could have important ramifications for the environmental performance of health systems (WHO, 2010).

19. An increased emphasis on environmental and occupational health, health promotion and disease prevention could further reduce the environmental footprint of health services. By targeting risk factors, these services reduce the demand for more resource intensive health care. Beyond their direct impacts on health, interventions such as those aiming to promote healthy diets, active transportation and urban greening have important co-benefits to the environment and, importantly, have been proven to be highly cost-effective (WHO Regional Office for Europe, 2015a).
20. Resource generation: This function is related to the production of the knowledge, infrastructure, health technologies (including medicines) and human resources required to provide health services (WHO, 2008a). The sustainability of the supply chain is a key determinant of the sustainability of the health system, and the environmental footprint of inputs such as pharmaceuticals and health facilities will have a great influence on the environmental performance of the overall health system.
21. On the role of the health workforce towards environmental sustainability, the value base of health workers, their credibility and close ties with the community, make them well positioned to act as agents of change. To realize the full potential of health workers in fostering sustainability, basic concepts of environmental management will need to be incorporated to the educational programs of health professionals, and where relevant, continuing professional development programmes will need to be developed to strengthen environmental literacy in the existing health workforce. Performance management systems can be leveraged to create positive incentives for health workers to actively contribute to fostering environmental sustainability.
22. With respect to the generation of new knowledge, the evidence base on the benefits of environmental sustainability for health systems is steadily accruing, with a wealth of case studies now being available and a growing number of peer-reviewed scientific publications. Overall however, much remains to be learned about environmental sustainability in health system and further research could contribute to more informed decision-making
23. Financing: is the function through which revenues are collected, pooled and allocated to providers of health services and inputs to the health system (WHO, 2008a). Financing arrangements enable the redistribution of resources to reduce financial barriers to access and to protect people against financial hardship, including impoverishment, when using health services.
24. The role of financing mechanisms, resource allocation processes, as well as procurement and purchasing is of particular relevance to creating incentives for change towards environmental sustainability. For example, incorporating environmental performance to purchasing criteria creates an incentive for producers and providers to optimize environmental performance. In many contexts sustainable procurement and purchasing practices turn out to be the largest single determinant of the carbon emissions attributable to the health system (SDU, 2013; UNDP, 2013).
25. Beyond purchasing practices, financial incentive structures can be established by revising accounting procedures to ensure that service providers are accountable for the cost of the resources consumed (e.g. water, heat, electricity) and the emissions produced (e.g. waste, waste water, particles) in the process of service delivery. This would create an incentive for providers to consume fewer resources and produce fewer emissions. Subsidy and tax schemes can be introduced to make environmentally sustainable choices more attractive, and where relevant, the savings generated by the reduced operating costs can be reinvested into the health system.

26. The transition towards environmental sustainability presents opportunities for health systems to access new sources of co-funding, as governments and donors across the globe are increasingly mobilizing and establishing incentive schemes such as those outlined above. Although these new sources of funding may be earmarked for investments in more environmentally sustainable alternatives, they nonetheless represent an increase in the overall funding envelope available to health systems, especially if the returns from investments are channelled back into health system budgets.

KEY ENVIRONMENTAL SUSTAINABILITY ACTIONS

OVERARCHING ACTION: ADOPTING A NATIONAL ENVIRONMENTAL SUSTAINABILITY POLICY FOR HEALTH SYSTEMS

27. There is no “one-size-fits-all” approach to integrating environmental sustainability concerns into the operations of health systems. Nonetheless, regardless of the specific context, there is considerable value in adopting a formal policy framework, developed through a consultative process involving health workers and other major stakeholders.

28. This framework, called here **national environmental sustainability policy for the health system**, expresses the values, commitments and priorities of the organization with respects to the environment. This national policy would be best accompanied by:

- A strategy or action plan including measurable performance objectives and clear roles and responsibilities, to ensure transparency, accountability and effective partnerships.
- An environmental sustainability assessment to provide information on the sustainability footprint of the organization and the stakeholders that should be involved in the change process.

29. Fig. 1 reflects the possible common elements of this policy/approach.

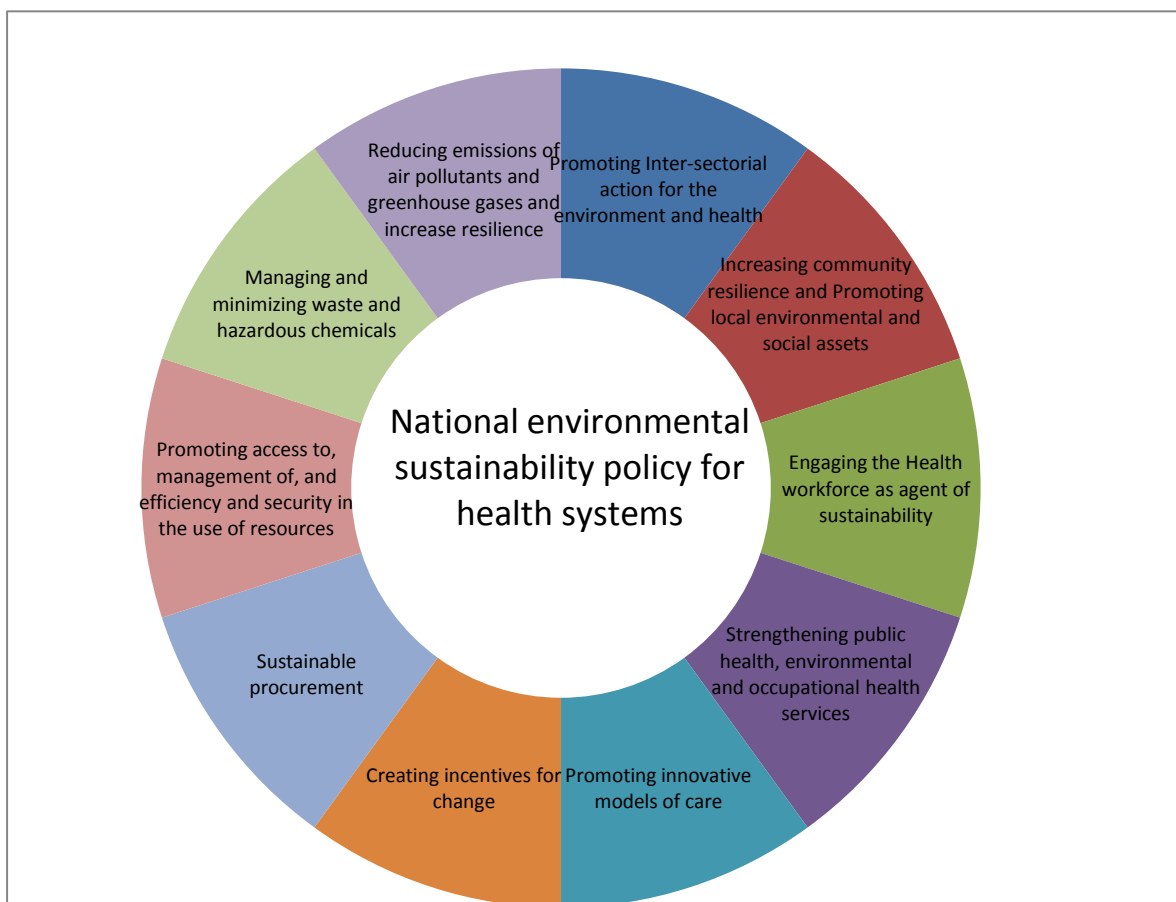


FIG. 1. POSSIBLE ELEMENTS OF A NATIONAL POLICY ON ENVIRONMENTAL SUSTAINABILITY IN HEALTH SYSTEMS

30. Each of them is further described below, in the form of key actions that could help in that process.

PROMOTING INTER-SECTORIAL ACTION FOR THE ENVIRONMENT AND HEALTH

31. Scaling up inter-sectorial action on environmental sustainability and public health prevention can reduce negative health outcomes at their source and facilitate making earlier, more effective responses to environmental and climate-related risks. Health-centred policies and programmes in sectors such as agriculture, transport, housing, and energy can lead to reduced environmental and health risks and improved health practices, behaviours, and processes.

32. Example of possible action – while the health system does not usually have direct control over environmental determinants, they however can:

- provide evidence and raising awareness on environment and health aspects;
- engage in joint monitoring of environmental exposures and health outcomes;
- monitor the implementation of health relevant Multilateral Environmental Agreements and define regulatory standards; and
- manage environmental and health risks, at both policy and programmatic levels.

INCREASING COMMUNITY RESILIENCE AND PROMOTING LOCAL ENVIRONMENTAL AND SOCIAL ASSETS

33. The location and surroundings of health services entail both responsibilities and opportunities tied to the local context. On one hand, health systems can strengthen local assets and foster community resilience; on the other, health systems' managers and workforce have a responsibility to promote environmental sustainability locally.

34. Example of possible action – explore opportunities and where appropriate engage in activities that strengthen local assets and promote local environmental sustainability, for example:

- promoting and enabling the use of public transportation and non-motorized transportation (cycling and walking) for patients, visitors and staff;
- using local green spaces for health promotion activities and, where feasible and appropriate, for other selected health systems activities (e.g. nature-based therapy);
- when planning the construction of new health infrastructure, making sure that these are developed in areas where it is possible to provide good access to staff, visitors, patients and suppliers through public transportation and active mobility. Also, include appropriate facilities (e.g. safe parking space, changing rooms, and green spaces) in the designing of the new health infrastructure.
- sourcing food and other goods and services locally, where feasible and appropriate; and
- informing local communities about health systems activities and involvement in health promotion activities and others where appropriate.

ENGAGING THE HEALTH WORKFORCE AS AGENT OF SUSTAINABILITY

35. Efforts towards environmental sustainability in health systems can succeed only with the active collaboration of an engaged health workforce. By engaging health workers in the process of creating, implementing and managing the environmental sustainability policy, organizations in the health system can foster a sense of ownership in and responsibility for the success of the environmental sustainability

strategy. However, to enable the leadership of health workers in environmental sustainability, the adequate institutional capacity and environment should be in place first.

36. Example of possible action – facilitate the leadership of health workers in environmental sustainability:

- engaging the health workforce and its associations and unions in embedding environmental sustainability and resilience in health system culture through clear policies, capacity building and motivation;
- ensuring staff development and performance management processes support a shift to more environmentally sustainable and resilient health care;
- ensuring the health workforce is prepared and able to adapt to the projected impacts of climate change;
- ensuring the health workforce are protected from environmental hazards and health is promoted at their workplace; and
- preparing the health workforce for environmental emergencies, different environmental conditions and changing patients' needs.

STRENGTHENING PUBLIC HEALTH, ENVIRONMENTAL AND OCCUPATIONAL HEALTH SERVICES

37. Preventive approaches are cost-effective in reducing morbidity and premature mortality, and can contribute to wider sustainability, with economic, social and environmental benefits (Merkur, Sassi & McDaid, 2013; WHO Regional Office for Europe, 2015a). The European Action Plan (EAP) for Strengthening Public Health Services and Capacity⁹, calls upon working on ten essential public health operations (EPHOs) (WHO Regional Office for Europe, 2012; WHO, 2012).

38. Example of possible action – To strengthen health protection and promotion services, and in particular:

- developing the institutional capacity;
- strengthening monitoring compliance with accepted environmental norms, regulations and standards;
- further promoting healthy environments (including healthy workplaces), safe and healthy foods, air quality, and supply chain safety and security; and
- further improving the performance of and access to environment and occupational health services.

PROMOTING INNOVATIVE MODELS OF CARE

39. Besides their crucial potential for benefits for patients, practitioners and health systems at large, there is a great potential in innovative models of care to deliver benefits in terms of environmental sustainability. Conversely, interventions towards greater environmental sustainability may help strengthen the overall sustainability of innovative models of care, as more and better estimates of potential health and environmental benefits of innovative models of care become more frequent (Weisz et al., 2011).

40. Example of possible action – once their health benefits for patients and operational benefits for practitioners are clear, to encourage innovative models of care, in particular through:

- changes in emphasis and improved coordination between primary, secondary and tertiary levels of care;

⁹ Endorsed by the sixty-second session of the WHO Regional Committee (resolution EUR/RC62/R5)

- encouraging the use of innovative technologies, including telemedicine, e-health and m-health; and
- changes in clinical guidelines/standard operating procedures reflecting environmental sustainability.

CREATING INCENTIVES FOR CHANGE

41. The uptake and implementation of policies and efforts towards greater environmental sustainability in health systems is unlikely to succeed without the right structure of incentives in place. While there are inherent incentives to greater environmental sustainability (e.g. cost reductions), an adequate regulatory environment is needed to make them effective. Health authorities and regulators can devise additional incentives for the uptake and mainstreaming of environmental sustainability. These can be of several types, tangible and intangible, financial or otherwise.
42. Example of possible action – contribute to or advocate for the creation of an incentive structure conducive to the uptake and implementation of environmental sustainability actions in health systems, for example:
 - achieving cost savings through reduced consumption of energy and other resources that can be reinvested in core health systems functions;
 - providing low interest financing for projects enhancing environmental sustainability;
 - implementing selected tax incentives linked to environmentally sustainable investments, etc.
 - making seed funding, additional funding or grants available for environmental sustainability initiatives; and
 - creating reputational/image incentives, such as those from sustainability certifications and awards, for institutions and professionals, or sustainability-related objectives in performance management schemes.

SUSTAINABLE PROCUREMENT

43. Health systems procure and use significant amounts of goods and services which can have effects on the environment throughout their lifecycle – from the initial extraction of raw materials, manufacture, transport, use and disposal.
44. Example of possible action – encourage sustainable procurement, through four main avenues of action:
 - using health systems buying power to maximize positive environmental outcomes: influencing suppliers to factor environmental impacts into their manufacturing processes is a powerful lever to deliver significant change;
 - reducing demand, looking for opportunities to buy and use less. A sustainable procurement approach constantly questions whether procured products are necessary, supports interventions that reduce demand for products or uses them more efficiently and ensures procured products are not wasted;
 - increasing efficiency in use, buying products, equipment or services that consume less and have a lower environmental impact through their ‘in use’ life and at disposal; and
 - substituting and innovating, assessing the environmental impact of products and services used or delivered by the health system. Where appropriate alternative products, materials or approaches can be used that have less impact on the environment and are more sustainable.

PROMOTING ACCESS TO, MANAGEMENT OF, AND EFFICIENCY AND SECURITY IN THE USE OF RESOURCES

45. Large efficiency gains can be achieved through an adequate management of the use of basic resources in health systems, specifically health care facilities and utilities. Evidence from a wide variety of countries illustrates the potential for resource and cost savings based on a conscious, data-driven health care facility management.
46. Example of possible action – encourage efficiency in the design, operation and maintenance of facilities and systems, and in the use of resources. Some examples from the areas of water, sanitation and hygiene (WASH), buildings and energy are:
 - Water, sanitation and hygiene: Safe WASH is an essential component of providing basic health services. Access to safe WASH in health care facilities lead to higher quality of care, less care-related infections, greater uptake of health services and uphold of dignity of vulnerable populations (WHO, 2015). Developing and implementing water safety plans (WSPs) for health care facilities is an effective means to provide safe drinking-water for the common domestic uses in health care facilities (e.g. hydration, personal hygiene, food preparation) and care-related uses, with specific emphasis on the needs and requirements of different patient groups (WHO, 2008b, 2011a). The identification of potentials for reducing water usage in health care facilities contributes to conservation of local water sources and to health systems resilience, especially in water-stressed regions, and is possible through various interventions (e.g. installation of water-saving armatures and devices). Safe management and disposal of wastewater and/or human waste by the health care facility is essential for preventing contact of patients/staff with human excreta, as well as for protecting community health and environment. Moreover, since poor WASH can cause outbreaks and thereby pose high demand on health services. It is therefore in the interest of health systems' sustainability and resilience (to climate change and extreme events) to engage in broader advocacy for safe WASH – in the facility and the community.
 - Buildings: Design, construction or rehabilitation of buildings housing health care facilities are important elements in maintaining environmental sustainability. In the building design phase, it is important to consider and minimize harmful pollution and carbon emissions released from the extraction of raw materials used in construction, and in the construction itself. In rehabilitation of buildings, for example, eliminating harmful substances is an important aspect. Improving elements of building planning and design such as site location, artificial lighting, natural ventilation, and open and green spaces can also be used to create an environment that minimizes environmental impacts, improves patient experience (e.g. thermal comfort) and outcomes and increases resilience to projected impacts of climate change (e.g. by locating health care facilities far from flood or landslide risk areas). Throughout the lifetime of the building, efficiency measures can include improved insulation, the use of natural ventilation, energy efficient lighting or the installation of combined heat and power systems.
 - Energy: Experience across the Member States suggests that three main principles can help guide action in improving the environmental sustainability of health systems regarding energy, namely 1) reducing unnecessary usage, 2) increasing energy efficiency, and 3) understanding where energy supply resilience can be improved. Benefits include improved security of energy supply for operating theatres and incubators, the provision of hot water and improved medicines and vaccines refrigeration and a decrease in air pollutants emissions and subsequent improvement in air quality and health of the population. In turn, improved energy security increases health systems resilience. Any energy savings, however, must not compromise patient and staff safety. For example, to minimize risks of Legionella infections in health-care facilities water temperatures of above 50 °C in hot water systems need to be maintained. Lowering the hot water temperature in favour of energy saving may compromise patient and worker safety.

MANAGING AND MINIMIZING WASTE AND HAZARDOUS CHEMICALS

47. The issues of health care waste and the use and disposal of hazardous chemicals in health systems are highly related. Health care waste includes general waste which is comparable to domestic waste, infectious waste such as pathological waste, sharps, chemicals, pharmaceuticals, genotoxic waste, radioactive waste and heavy metals such as broken mercury thermometers (WHO, 2011b; ILO, 2011). Poor management of health care waste exposes health care workers, waste handlers and the community to infections, toxic effects, injuries, poisoning and pollution by toxic elements or compounds, such as mercury or dioxins that are released during incineration (WHO, 2014b). The release of pharmaceuticals into the environment, whether in waste or wastewater, is a specific concern. Health facilities also procure, use and throw away large amounts of other consumables, including furniture, foods, and office supplies as well as medical supplies and single use (no-energy) medical devices, and also chemicals and pharmaceuticals. If properly segregated, much of the health care facilities' "general" waste stream can be recycled.
48. In addition, a number of the products used in health services (e.g. cleaners, disinfectants, some medical devices, electronic equipment, etc.) contain hazardous chemicals that can cause occupational risks as well as downstream health impacts through pollution and inadequate disposal, thus linking with the issue of waste management in health systems. These hazardous chemicals include mercury, vinyl chloride (PVC), flame retardants, phthalates, and volatile organic chemicals (VOCs) among others. In some cases, substitution is not feasible, but where possible and cost-effective, shifting to less hazardous alternatives can be an important step to reduce exposure to chemicals and for countries to meet their obligations under international environmental agreements such as the Stockholm Convention on Persistent Organic Pollutants and the Minamata Convention.
49. Example of possible actions – 1) ensure adequate management of health care waste and promote the minimization of general non-hazardous waste; and 2) minimize the use of products containing hazardous chemicals in health systems:
- developing and implementing measures to manage and minimize the production of health care waste, in line with the recommendations of the "Safe management of wastes from health-care activities" (WHO, 2014b);
 - minimizing the production of general non-hazardous waste through adequate classification, waste reduction, reutilization and recycling;
 - developing a chemicals policy in health systems, in accordance with local, national and supranational regulations;
 - prioritizing chemicals for minimization and substitution based on scientific and economic evidence; and
 - where medically, technically and economically feasible, substituting products containing hazardous chemicals for less hazardous alternatives in within health systems.

REDUCING EMISSIONS OF AIR POLLUTANTS AND GREENHOUSE GASES AND INCREASE RESILIENCE

50. Health systems as a whole are carbon intensive, thus contributing to climate change. In turn, health effects from climate change will continue to add pressure on health systems through an increase in overall burden of disease. In addition, the recent World Health Assembly resolution 68.8 (WHA, 2015) urges health systems to address air pollution comprehensively: 1) In a cross-sectoral "health in all policies" approach, and 2) minimizing "as far as possible air pollution specifically associated with health care activities, including by implementing, as appropriate, relevant WHO guidelines". Health systems have

an opportunity to lead by the example in this area, as well as promoting air pollutants' and GHG emissions reductions from a health standpoint.

51. Example of possible actions:

- developing and implementing an action plan for reducing emissions of air pollutants and greenhouse gases, informed by a periodic carbon and pollution accounting exercise;
- promoting policies and interventions in all relevant areas that simultaneously reduce air pollutants emissions and exposure, and greenhouse gas emissions, through a cross-sectoral "health in all policies" approach;
- prioritizing low-carbon alternatives in the design and operation of the built environment, procurement and purchasing, energy efficiency, energy sourcing, retrofitting and equipment;
- promoting low-carbon alternatives in ancillary areas to health systems, like non-motorized and/or public transportation, administration services, etc; and
- promoting environmentally sustainable actions that increase health systems resilience to climate change, such as those fostering energy and water security, zoning regulations for health facilities, etc. (WHO, unpublished).

MANAGING CHANGE

52. Health systems throughout the WHO European Region are highly diverse and comprise complex organizations and institutional relationships. Policy and regulatory requirements, as well as global trends and local factors influence the constant progress and change process in health systems. In this context, the adoption, implementation and/or mainstreaming of environmental sustainability entails a process of change that should be carefully timed and managed.
53. There are several examples, globally and in the Region, of planned change management in health systems regarding their core functions (governance, resource generation, service delivery and financing). In terms of change management towards environmental sustainability, however, most examples are bottom-up, local, and driven by providers. While bottom-up change is crucial, it needs to be complemented by governance-driven, planned change, in order to have a real effect throughout whole health systems.
54. Solid examples of planned change for environmental sustainability in health systems exist in a few countries of the WHO European Region. For example, the United Kingdom National Health Service (NHS) Sustainable Development Unit has been using a "Route Map" to develop a sustainable health system, identifying areas that require progress and describing roles of different stakeholders. The Route Map is structured across a vision, or ultimate goal, and three time periods: "Getting started", "Transformation phase" and "Transformation occurs". Ultimately, every health system should manage change according to its own institutional and organizational environment, as well as the broader local context.
55. To start the process of implementation and mainstreaming of ESHS at the national level, a number of proposals were generated at the first meeting of national focal points and experts that were gathered by WHO Regional Office for Europe in a technical workshop on "Greening Health Systems" held in Bonn, Germany, on August 27-28th 2013 (WHO Regional Office for Europe, 2013b). These included:
- a. to integrate health system sustainability into national environmental programming, as well as develop a national health system policy framework;
 - b. to get there, use a route map approach, which can be utilized as a resource to highlight opportunities and coordinate action plans across a number of collaborators and stakeholders;

- c. to organize national stakeholder consultations with the aim to agree on a national joint vision and objectives and agreeing on a joint roadmap;
- d. to identify champions;
- e. to elaborate on low cost and high opportunity priorities for the next five years;
- f. to build institutional capacity-building through step-by-step hands on learning; and
- g. to communicate results systematically.

56. Technical components of change need to be embedded in a positive culture of improvement, which can be supported by many approaches. A tailored approach to policy work should be combined with global and regional guidance, standards and evidence. Overall, tackling environmental sustainability offers many win – win opportunities (e.g. external resources of financing, societal appreciation, etc.). However, establishing proper accountability mechanisms will be essential to measure progress and to communicate successes. This is even more important when dealing with external partners, such as in inter-sectorial action and stakeholder engagement. In addition, communication and awareness rising within MS will be essential to work out win-win situations.

NEXT STEPS

57. This document is part of a series of developments, which will be required to put forth a discussion document on Environmental Sustainability in Health Systems at the Regional Committee in 2017. The topic will also be considered to become an agenda item at the next Environment and Health Ministerial Conference in 2017.

58. For this to be successful, a number of further preparatory steps are required:

- to integrate comments received by European Member States, with the overall aim to improve this document, and to further prepare it as a discussion document to the Regional Committee to provide the basis for a Regional Committee Resolution;
- to report the discussion of the upcoming meeting on Environmentally sustainable health systems, to be held in Bonn, Germany, on 11-12 November 2015, to the European Environment and Health Task Force, which will be meeting in November 2015 and to other follow-up meetings; and
- to organize two dialogue meetings at subregional level (e.g. south-eastern Europe) to discuss the opportunities, feasibility and practicability of such approaches.

59. Within the framework of the Global Program of Work, Health 2020, the various Environment and Health Ministerial Resolution and health systems, the WHO Regional Office for Europe can support Member States in these developments, by:

- commissioning studies and advocate for research to strengthen the evidence base on the benefits of environmental sustainability to health systems, and in understanding the change management required in fostering environmental sustainability in health systems;
- collating examples of good practices and case studies for the creation of a stronger evidence base for action and proof-of-concept and documenting all steps of the process;

- developing a package on the technical “Know-how” in developing environmentally sustainable health systems. As it requires a large range of expertise, the creation of a hub of expertise will be essential; and
- and exploring further opportunities which arise in a number of areas, as well as at sub regional level.

60. This will only be possible in partnership: important partners include, but are not limited to, the Association of Schools of Public Health in the European Region, the Eurasian National Health Accounts network, the EuroHealthNet, the European Network of Health Promoting Schools, the European Public Health Association, the Healthy Cities Network, the International Network of Health Promoting Hospitals and Health Services, the Pharmaceutical Pricing and Reimbursement Information network, the South-eastern European Health Network, and the Global Green and Healthy Hospitals Network.

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**The WHO Regional
Office for Europe**

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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The WHO Regional Office for Europe supports Member States' efforts towards environmentally sustainable health systems (ESHS). Participants nominated by Member States, external experts and WHO staff met in Bonn, Germany, on 11-12 November 2015, to discuss the main elements of a strategic approach towards ESHS. The discussions were supported by a discussion draft elaborated by the WHO Regional Office for Europe, as well as an evidence summary, case studies and presentations from experts. Country participants presented a great variety of national examples of environmental sustainability actions in health systems and highlighted their willingness to share information on these and other existing case studies. The participants highlighted the importance of ESHS and the relevance and timeliness of the draft strategic document. This draft will be further reviewed to incorporate inputs from Member States, with a view to use it as a basis for including the topic of ESHS in the relevant policy processes, particularly the next Environment and Health Ministerial Conference, in 2017, and the Regional Committee in the same year. The WHO Regional Office for Europe will support this process with evidence, and act as convener in collaboration with Member States.

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