

Tackling Environmental Antimicrobial Resistance

Session 4, Africa-Asia Workshop – Future Agenda to Contain Antimicrobial Resistance

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23rd March 2021

United Nations Environment Programme (UNEP)

an authoritative advocate for the global environment



United Nations Environment Assembly (UNEA):

- World's highest-level decision-making body on the environment.

The Assembly is the governing body of the United Nations Environment Programme (UNEP).

- UNEP sets the global environmental agenda

UNEP's mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.

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SUSTAINABLE DEVELOPMENT GOALS

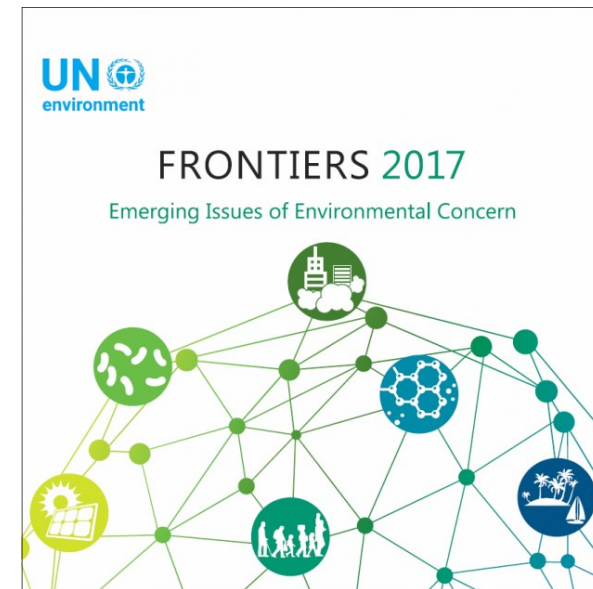


United Nations Environment Programme

- Promotes coherent implementation of the environmental dimension of sustainable development
- Offers science-based policy solutions in published reports
- The only way to reach the Sustainable Development Goals is through a One Health approach
 - This requires the engagement of UNEP to help guide Environmental Health Policy as it relates to AMR issues

United Nations Environment Programme's work on AMR

- UNEP is working to **provide evidence** that can **inform national and global strategies on AMR**.
- The **environmental dimension** of AMR was identified as an issue of emerging concern in the **Frontiers 2017 report**.
- UNEP is increasing its coordinated activities with the Tripartite organizations:
 - promoting and **strengthening** the capacity of countries to implement the **environmental dimensions of the 'One Health' approach** (linking human, animal and ecosystem health)
 - enhancing and broadening the **multi-stakeholder** involvement in AMR collective work
- UNEP is looking into **municipal waste** and **wastewater and sewage sludge** as important **surveillance points**, allowing assessment of the abundance of antibiotic resistant bacteria and resistance genes in the human population
- Increasingly UNEP has been working on other aspects of One Health (e.g. air quality, AP Regional Forum on Health and Environment)
<https://www.unenvironment.org/resources/frontiers-2017-emerging-issues-environmental-concern>
<https://www.unenvironment.org/resources/report/preventing-future-zoonotic-disease-outbreaks-protecting-environment-animals-and>



PREVENTING THE NEXT PANDEMIC

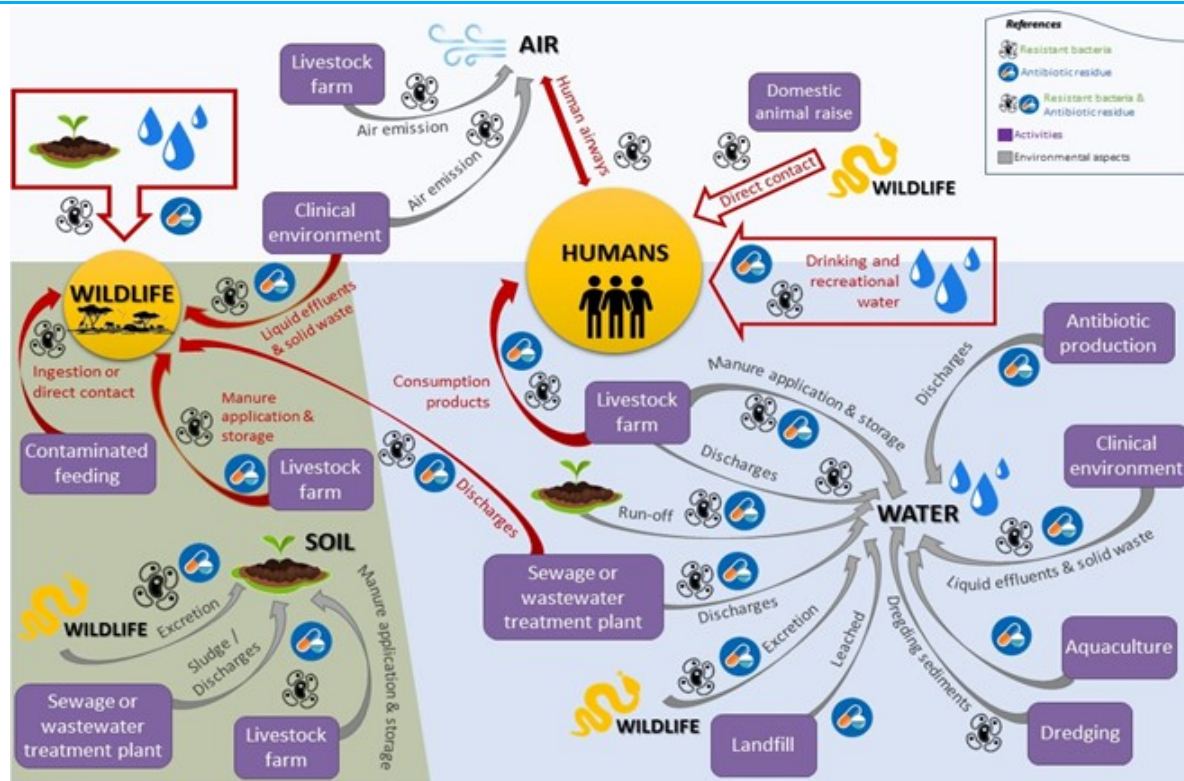
Zoonotic diseases and how to break the chain of transmission



A Scientific Assessment with Key Messages for Policy-Makers
A Special Volume of UNEP's Frontiers Report Series

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Entry of residues, resistant microorganisms and antimicrobial resistant genes into the environment



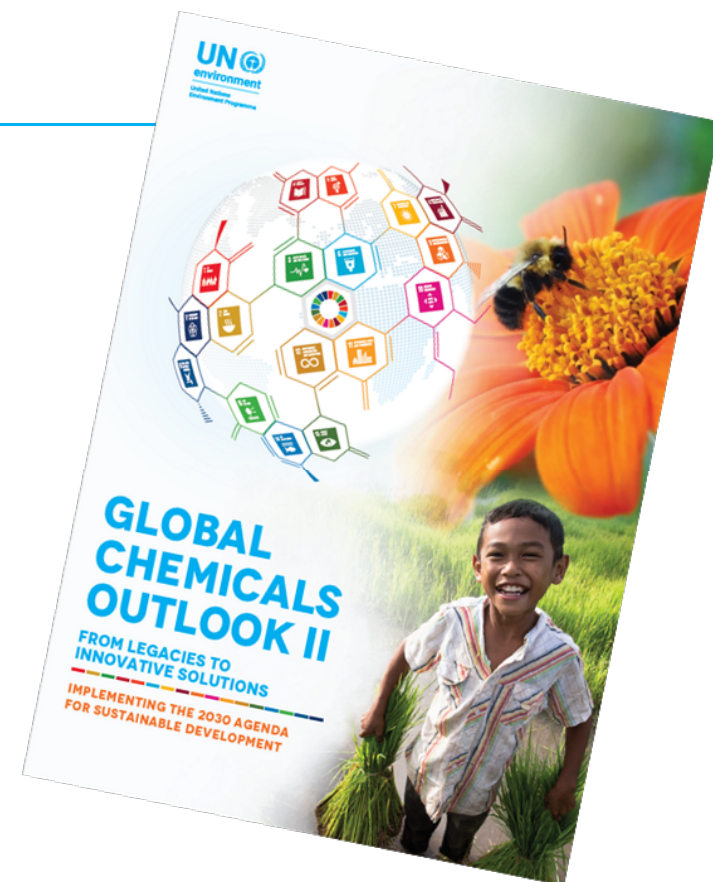
- Antimicrobial Resistance in the Environment is a complex problem, and it will require coordinated solutions.
- The source of AMR in soil and water are numerous and extend from production of antimicrobials, through usage and waste management.
- Every identified pathway (arrows) of contamination also present a target for intervention and measures for mitigation.
- UNEP is increasing coordination and cooperation efforts.

Image source:
<https://www.unenvironment.org>

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Seven examples on how to act now, adapted from the **Global Chemicals Outlook II**:

1. Collaborate. Agree. Prioritize.
2. Act. Implement existing plans and guidelines
3. Strengthen waste management regulations
4. Incentivize sustainable pharmaceutical development
5. Act across entire value chain
6. Improve education of antimicrobial prescribers
7. Fill knowledge gaps



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Collaborate. Agree. Prioritize.



Collaboration means addressing AMR from a One Health approach;
Agreeing on the actions that should be taken within that collaboration;
Prioritizing those approaches based on scientific evidence.

As an example, this means that internationally, it is important to establish clear definitions and identification criteria for Environmentally Persistent Pharmaceutical Pollutants (EPPPs) – antimicrobials, biocides – to include prioritization approaches, and relevance of pseudo-persistent pharmaceutical pollutants.

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Act. Implement current plans and recommendations

Implement the global, regional, and national action plans and recommendations for the containment of Antimicrobial Resistance.



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Waste management regulations and practices

Strengthen regulatory requirements and capacities
For example, the GCOII suggests steps for addressing pharmaceutical pollutants:

- waste treatment and management,
- effluent standards,
- implementation of disposal and take-back programmes,
- adherence to best available techniques and best environmental practices.

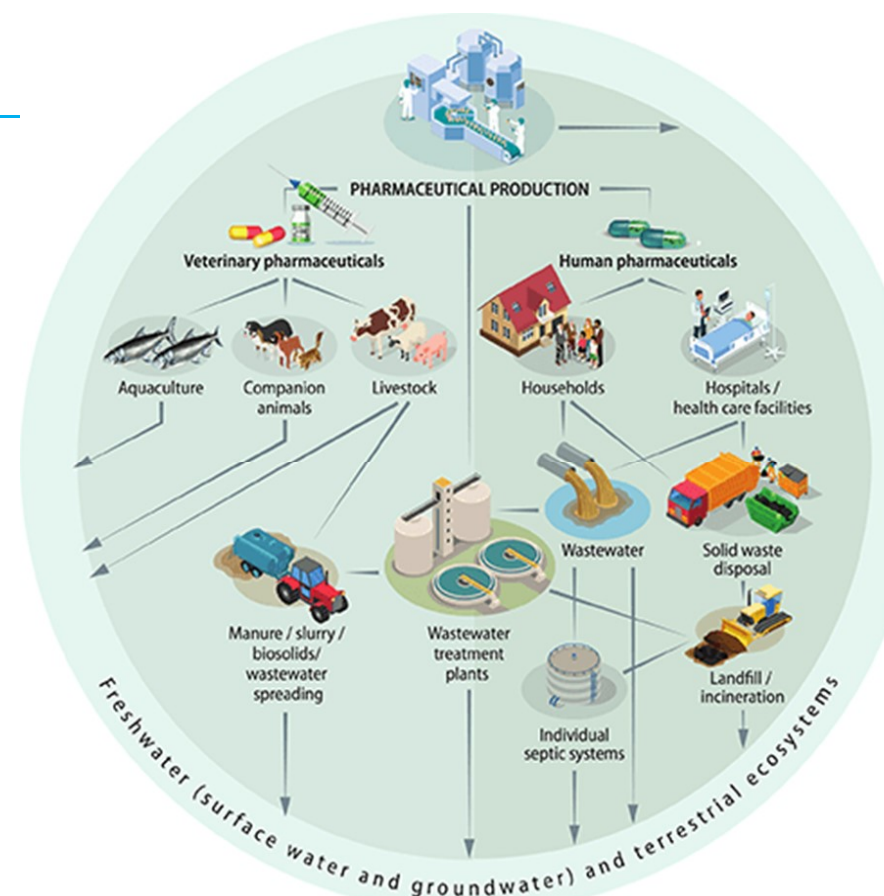


Image source:

[OECD \(2019\) Pharmaceutical Residues in Freshwater: Hazards and Policy Responses](#)

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Incentivize sustainable pharmaceutical development

Provide incentive structures for development of green and sustainable pharmaceutical drugs for human and veterinary uses, including through procurement and innovation.

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Advancing the One Health Response to Antimicrobial Resistance



Act across the entire value chain

Ensure that relevant interventions address the whole value chain, including research and development, production, prescription and use, treatment and disposal.

Image source:
["Chain Linkage" by Max Klingensmith](#)

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Improve Education of Antimicrobial Prescribers

Enhance training of healthcare professionals, medical and veterinary, to aid in informed prescription choices, and to improve hygienic standards for infection prevention, particularly in hospitals, farms, and communities.

Image source:

["U of M Veterinary Student" by Minnesota FFA](#)

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Discovery, Knowledge Sharing

Address knowledge gaps and improve monitoring and surveillance to identify and quantify primary sources of environmental pollution that contribute to the spread and emergence of antimicrobial resistance and share findings globally.

- Good quality data collection and management
- Best practices for laboratories to detect AMR threats
- Coordinated data sharing and harmonized analysis
- Expert consultations

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A **One Health approach** is essential to addressing Antimicrobial Resistance in the environment. UNEP is committed to this vision and is engaged in many multi-sector, multi-stakeholder collaborations and partnerships.

UNEP is working in a One Health capacity. Examples of these collaborations include:

- The Antimicrobial Resistance Environment Project funded by the Multi-Partner Trust Fund
- Awareness Raising (ex. World Antimicrobial Awareness Week (WAAW))
- Capacity building
- Regional and Country level initiatives
- 'One Health High-Level Expert Council', and 'One Health Global Leaders Group on Antimicrobial Resistance'

Antimicrobial Resistance is a Global
Human, Animal and Environment Health
Crisis.

There is no time to waste.

Thank you



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