Need for One-Health action to contain Antimicrobial Resistance

CSE Webinar on One-Health Action to Preserve Antibiotics
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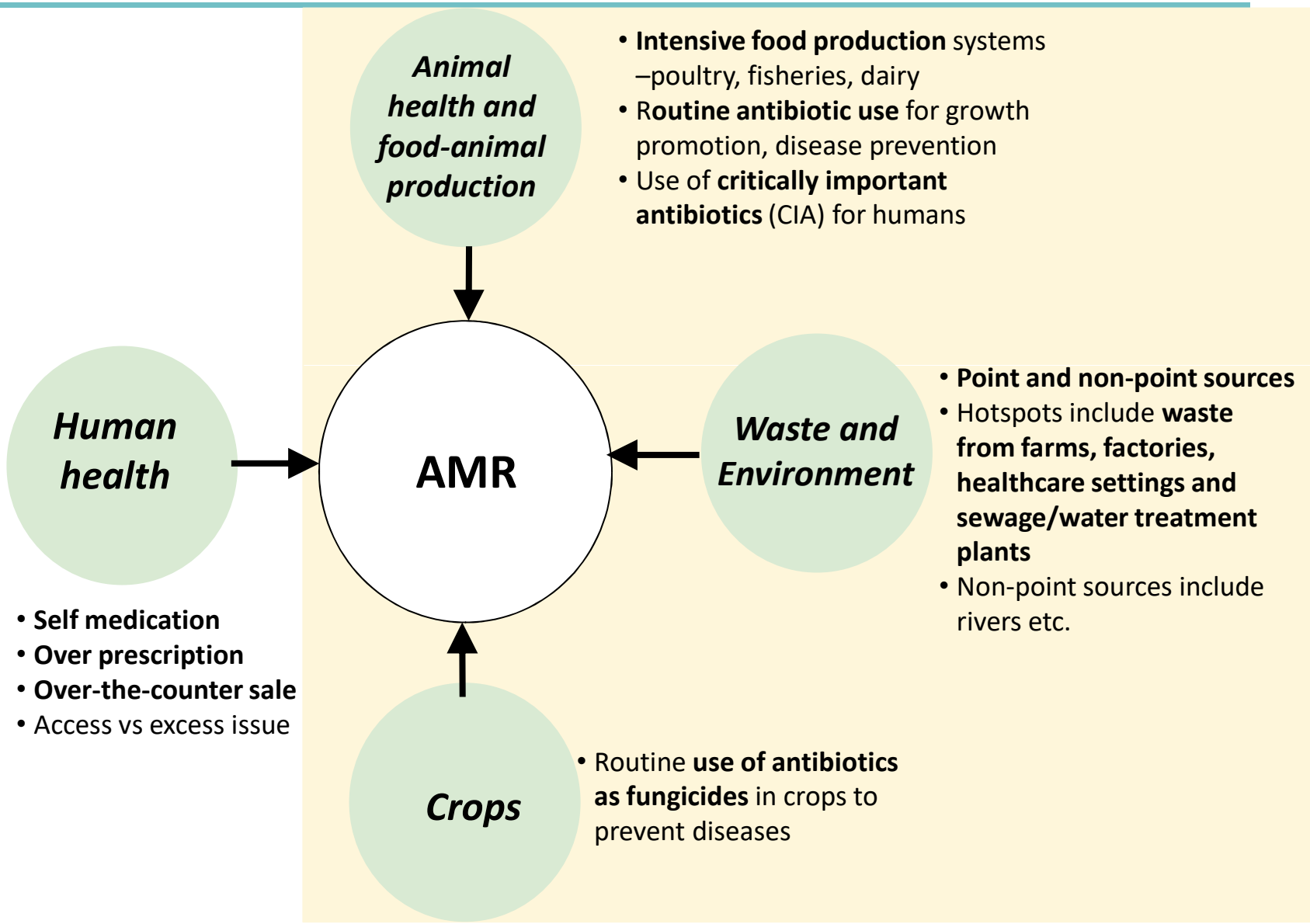
The crisis of Antimicrobial Resistance (AMR), a chronic pandemic of huge cumulative damage

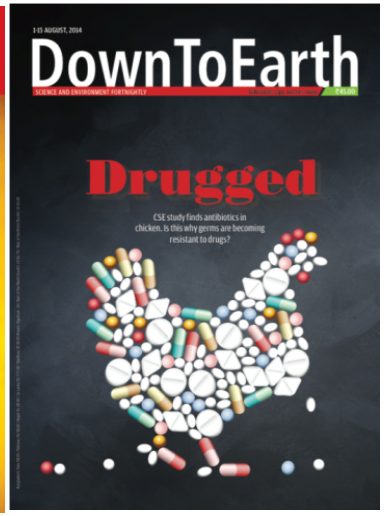
- **700,000 deaths globally every year estimated due to resistant infections**
- **If no action is taken, this could increase to 10 million deaths per year by 2050**
  - About **27,400 lives per day or about 1,140 lives per hour** would be lost by 2050
  - This is more than the damage being caused by Covid19 (>1.3 million deaths since March 2020)
  - **90% of these deaths can happen in Asia and Africa**, heavily impacting the developing world
- **AMR, a chronic pandemic**
  - Has been **causing deaths for many years** in all countries and is estimated to continue doing so in the future
  - **Silent pandemic:** does not invoke panic around the damage it causes
  - **Potential of huge cumulative impact**: can affect the outcome of all kinds of bacterial infections, existing antibiotics are becoming ineffective, pipeline for new antibiotics remains dry

Key dimensions of Antimicrobial Resistance (AMR) and CSE focus

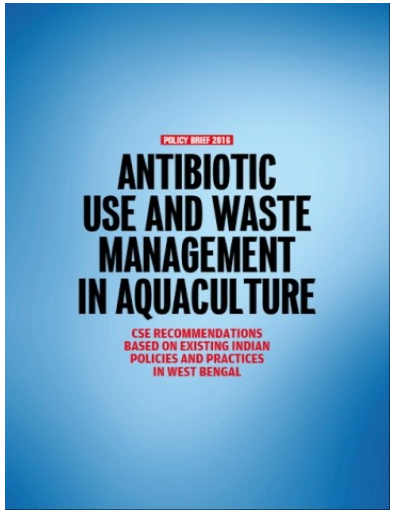


Just like many parts of the world, misuse of antibiotics is also a problem in India

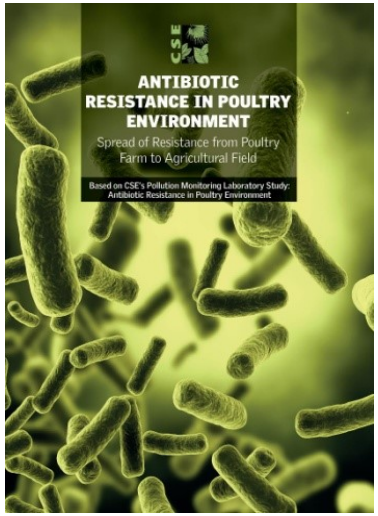
2010 (Honey)



2014 (Poultry)



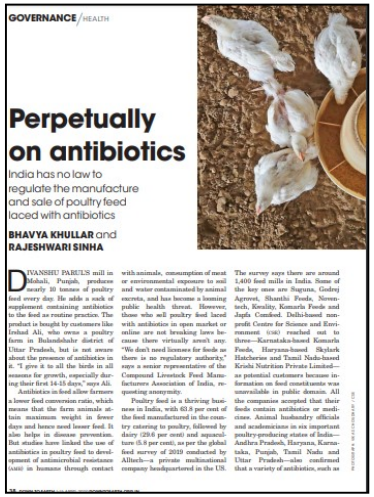
2016 (Fish)



2017 (Poultry farms)

2019 (Crops)

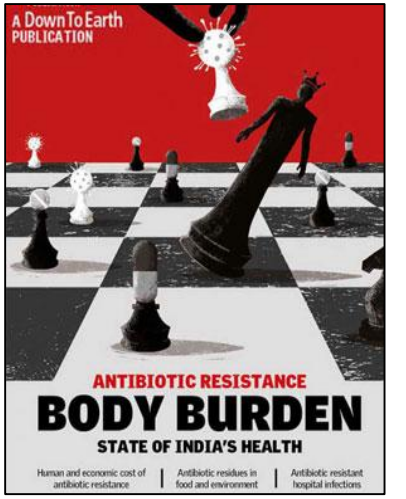
2019 (Unused drug disposal)



2020 (Feed)

2020 (Fast food)

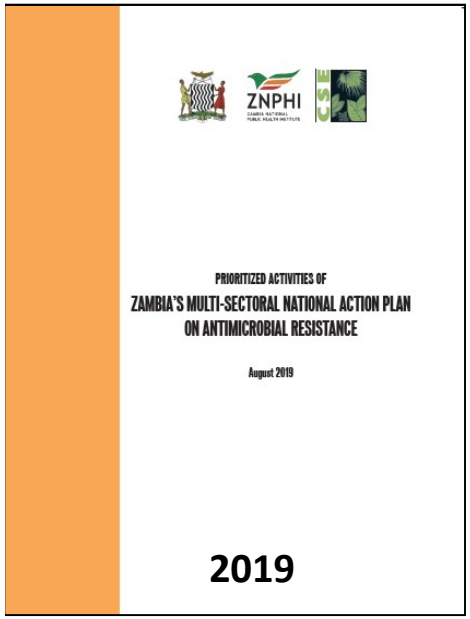
2020 (Dairy)



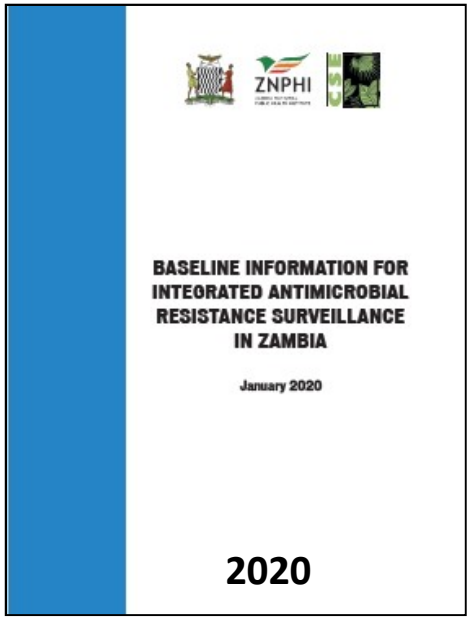
2020

CSE's work in Zambia

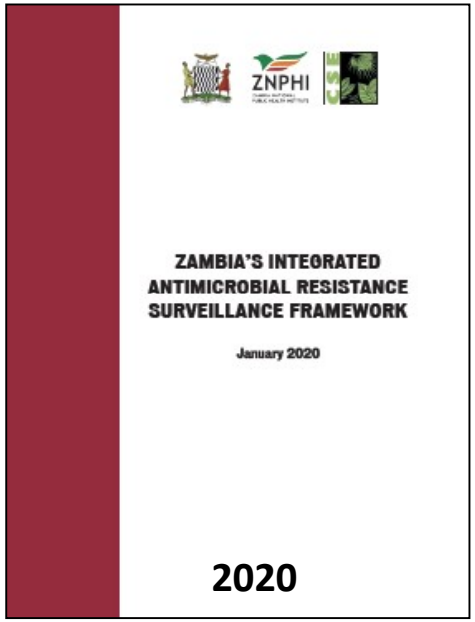
CSE is working with the government of Zambia to support implementation of the Multi-sectoral National Action Plan on AMR



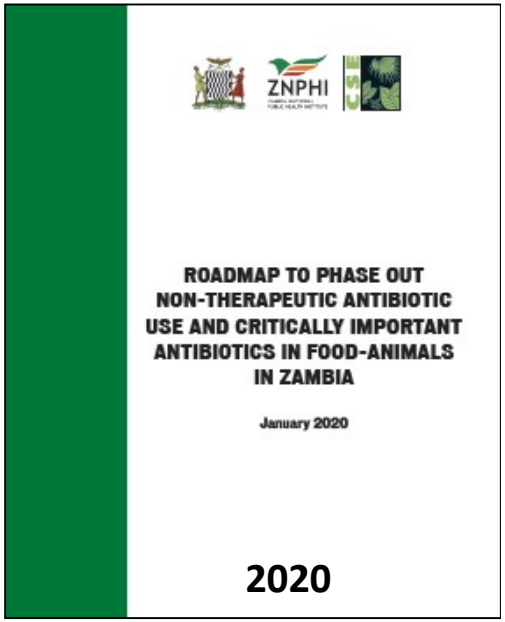
Prioritized NAP-AMR for Zambia



Baseline information for Integrated AMR surveillance



Framework for Integrated AMR surveillance



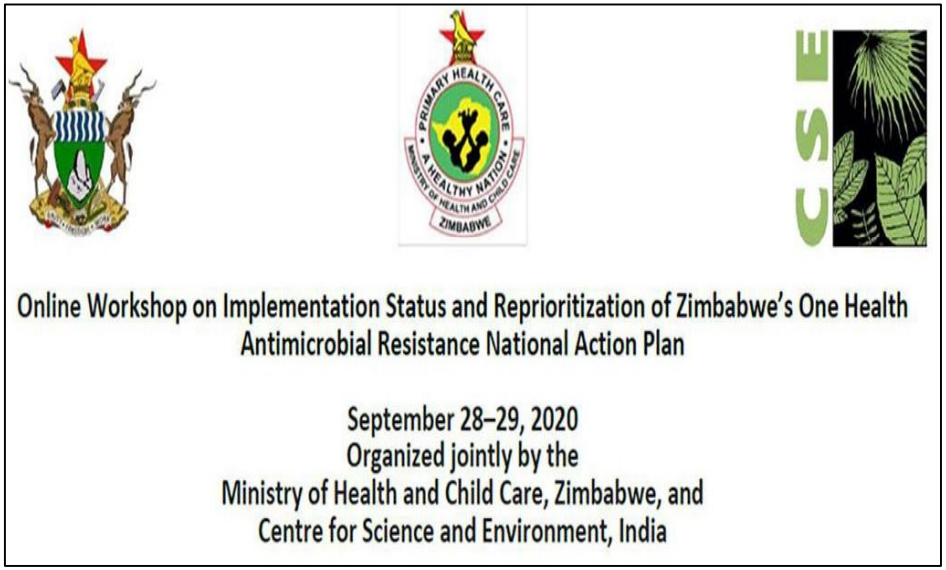
Roadmap to phase out misuse of antibiotics in food-animals

Currently, CSE is engaging the Zambia Environmental Management Agency (ZEMA) to develop a framework for a drug take-back programme and Extended Producer Responsibility

CSE's work in Zimbabwe

CSE is working with the government of Zimbabwe to support implementation of the One-Health Antimicrobial Resistance National Action Plan

Media workshop for journalists in Zimbabwe



Workshop on NAP implementation status and prioritization

CSE is currently working on developing a prioritized National Action Plan on AMR for Zimbabwe

Time to look back and take stock

Three key issues which reflect that the need for a true One-Health approach is yet to be met:

1. **National AMR Action Plans are struggling to move as planned**
2. **Apprehension among animal sector stakeholders and limited buy-in from them**
3. **Environment remains the weakest link**

1. National AMR Action Plans are struggling to move as planned

- **AMR issue is still largely driven by the healthcare ministries and sector stakeholders, over and above animal and environment sectors**
  - Main agenda of protecting human-health aligns with the AMR agenda
  - More trained human resources involved in combating AMR
  - Stronger and active national presence of the World Health Organization (WHO) than the other members of the tripartite and the United Nations Environment Programme (UNEP)

This leads to limited support and buy-in from other sectors like that of animal-health and environmental management

- **Lack of dedicated budgets allocated by country governments for addressing AMR**
  - Dependence on donor agencies
  - Political commitment still largely on papers

AMR remains human healthcare agenda rather than truly a One-Health agenda despite some efforts made in this direction

2. Animal and food sector stakeholders remain apprehensive of rearing food without antibiotics

- **Strong and continued belief** in intensive food production systems as a solution to food security concern
- A systematic effort to make a case for **non-antibiotic way of producing food** through better biosecurity and good animal husbandry practices, use of alternatives has not been made

What has this led to

- **Plans to mitigate the risks** due to transition are therefore missing
- **Alternatives** not promoted, **incentives** not created and institutionalised
- **Awareness** on growing food **without antibiotics** is not created among farmers
- Use of antibiotics for **growth promotion** and **disease prevention**, and use of **critically important antibiotics in animals** is still a common practice
- Antibiotics are still available **over-the-counter**, and **farm waste** is still not well-managed

3. Environment remains the weakest link

- **At the global level**
  - The UNEP has been roped in for a couple of years now but its **role and contribution is yet not clear**
  - **Hardly any technical guidance to contain AMR from the waste and environment such** as how to set discharge limits of antibiotics in waste or how to manage waste from different point sources in view of the AMR determinants
  - Scientific community is figuring out environmental issues such as **transmission pathways** of AMR
- **At the country level**
  - Environmental stakeholders seem to have **recognized the issue**, and show **keenness to address it**
    - No competing interest as in the case of the food and animal-health sector
    - Overall mandate aligns well in case of antibiotics too
  - Efforts are marred by challenges
    - **Limited understanding** on what to do and how to do
    - **Lack of capacity, funds** to carry out their work which is quite resource-intensive

AMR in the environment is a cross cutting and complex issue

Point Sources				Non-point Sources
Farms	**Factories**	**Households/ Community**	**Healthcare Settings**	
Waste from: • Animal farms – poultry, dairy, pig, fish etc. • Agriculture farms	Effluents from: • Pharma manufacturing • Feed mills • Slaughter houses • Processing units (meat, dairy) • Effluent treatment plants	• Effluents from Sewage treatment plants • Disposal of unused, expired drugs	• Hospital sewage • Waste from veterinary care settings	Rivers, Reservoirs Groundwater Agricultural soil

Three AMR determinants that travel across the systems, sectors: Antibiotic resistant bacteria, Antibiotic resistance genes, Antibiotic residues

Continuous and perhaps ever-lasting interplay among AMR determinants sets the ground for resistance growing like a chain reaction

Big change needed-Animal sector

- **Countries need to manage the way food is grown; re-think the relationship – how it is produced and its overall impact**
  - Ban antibiotic use for **growth promotion**; regulate feed well – antibiotics not to be allowed
  - Restrict **mass disease prevention** (i.e. group preventative use); regulate **over-the-counter sale** of antibiotics
  - Limit use of **critically important antibiotics**; preserve those with **highest priority** for human use (quinolones, macrolides, 3rd,4th, 5th gen cephalosporins, polymyxins, glycopeptides)
  - **Reduce need for chemicals** by focusing on animal husbandry, bio-security, alternatives, diagnostics, and veterinary extension systems
  - **Reduce dependence on intensive systems**; grow more food in other settings
  - Better **waste management** from farms

Big changes needed-Environment sector

- **AMR centric waste management approaches should be adopted at global and national level**
  - Necessary **policies and technical guidelines** on siting, biosecurity, sanitation and hygiene, waste management for different point sources should be developed
  - **Surveillance** of waste/effluents, litter, manure for AMR determinants, particularly from hotspots, should be carried out
  - Standards for antibiotics in waste should be developed wherever required; antibiotics in waste from **commercial entity** could be considered as a **hazardous chemical**
  - **Capacity** of environmental regulators at national level should be increased and strengthened w.r.t. AMR; necessary **lab infrastructure** and **resources** to be put in place
  - While the evidence is building up, action should not wait; **precautionary principle** should be considered

Thank you

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