

### AMR is a complex global challenge. Everyone is at risk

- Antimicrobial resistance (AMR) is projected to cost the global economy US\$100 trillion by 2050. Part of this cost will be from lost agricultural productivity and impacts on food security and safety.
- The global 'One Health' call to action to mitigate the AMR crisis is challenging to implement, because antimicrobials are used in many different contexts, and the more we use them, the more we encourage the development and spread of AMR.

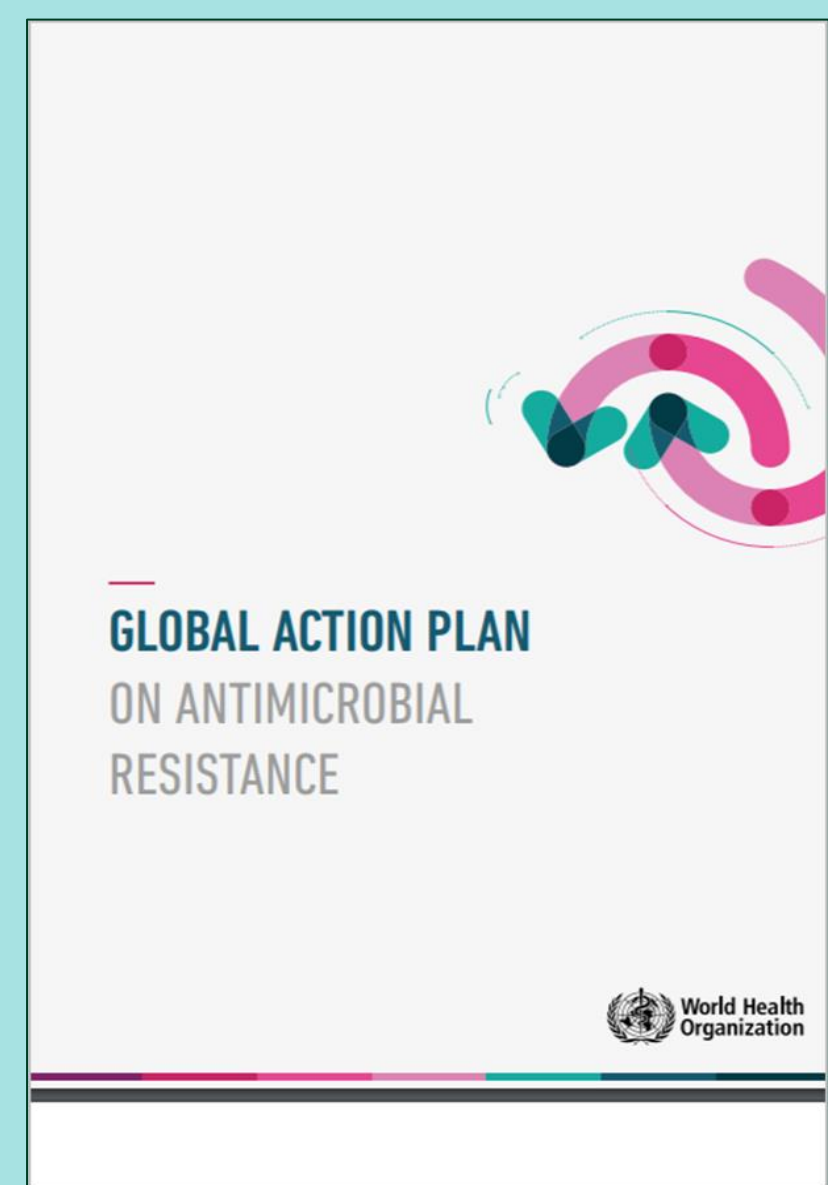


Fig. 1 The GAP

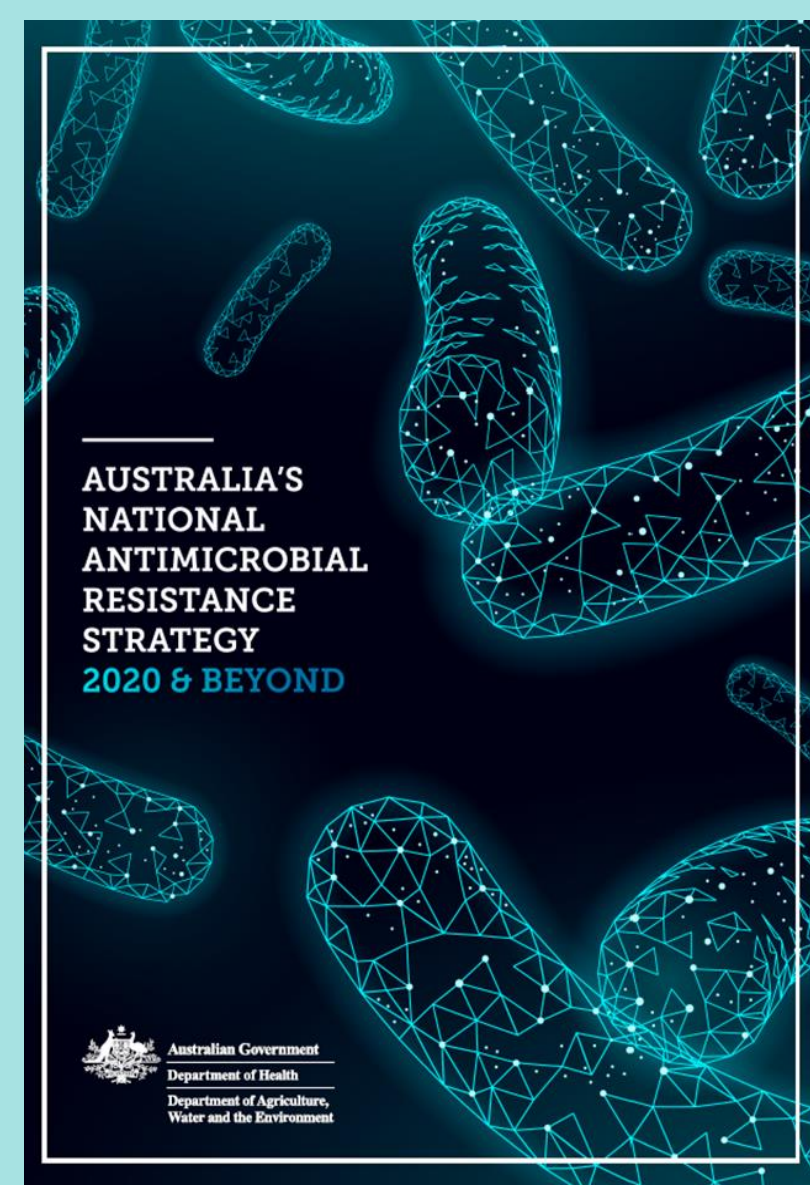


Fig. 2 Australia's One Health AMR Strategy and One Health Master Action Plan



Fig. 3. A 'One Health' approach to managing AMR recognizes that populations, species, facilities, and industries co-exist within environments, and are connected by the movement of people, animals, goods and materials. The drivers of AMR, as well as the resistant organisms and their genes (all represented here by white dots), are also connected across populations, species, and environments.

### Cross-sectoral collaboration is needed

A One Health approach to AMR needs coordinated action across all sectors

OBJECTIVE 1 CLEAR GOVERNANCE FOR ANTIMICROBIAL RESISTANCE INITIATIVES	One Health Sectors
<b>PRIORITY AREAS 1.1 - 1.4</b>	Agribusiness, Animal Health, Environment, Food, Human Health
<b>FOCUS AREAS 1.1.1 - 1.4.1</b>	
1.1 Create sustainable funding for combating antimicrobial resistance based on evidence of economic and societal costs and benefits of different approaches in all sectors	• • • • •
1.1.1 Establish objective and robust benchmarks to measure the impact of antimicrobial resistance initiatives in order to provide the evidence required to secure continued and new funding.	• • • • •
1.1.2 Publish national reports on AMR and antimicrobial usage to contribute to the evidence base for measuring economic and societal costs.	• • • • •
1.2 Develop, implement and/or maintain sector-specific action plans	• • • • •
1.2.1 Encourage stakeholders to ensure their governance structures include plans for managing AMR.	• • • • •
1.2.2 Develop accountable and transparent sector-specific action plans with stakeholders, including monitoring and evaluation frameworks.	• • • • •
1.3 Maintain and expand linkages and opportunities between stakeholders across all sectors to provide a nationally coordinated approach to combatting antimicrobial resistance	• • • • •
1.3.1 Review, strengthen and consider broadening AMR governance structures across all sectors and settings and ensure all relevant stakeholders are engaged.	• • • • •
1.4 Monitor and review regulatory measures (legislated and other) relevant to antimicrobial usage and resistance	• • • • •
1.4.1 Seek opportunities to strengthen regulation to more effectively limit the emergence and spread of resistance.	• • • • •

**Research Program**  
SAAFE's collaborative research program is industry-led and impact-driven. It comprises three cross-cutting and integrated programs.

Fig. 4 (left) Objective 1 of Australia's One Health Master Action Plan

### Implementing One Health policy is highly challenging

- AMR is complicated by pervasive uncertainties, the multi-sectoral nature of the problem, and the complex interrelatedness of AMR risks and drivers.
- Many industry stakeholders have low AMR awareness and understanding.
- Effective engagement and support across a multitude of different industries and regulators is needed to prioritise and generate appropriate action, and to stop AMR mitigation being perceived as abstruse, too costly, or somebody else's problem.
- Industry-appropriate communication supports decision makers to act.

### SAAFE<sup>CRC</sup>: Translating research into action and impact

- Australia's Cooperative Research Centre for Solving Antimicrobial Resistance in Agribusiness, Food and Environments (SAAFE<sup>CRC</sup>) is a 10-year, \$150M program assisting industries, government, and researchers to monitor, assess, and mitigate AMR.
- SAAFE brings together partners and stakeholders across a broad range of sectors to help them identify and share both the benefits and cost of AMR solutions.
- SAAFE centres the environmental dimensions of AMR at the heart of its response and is using systems-based approaches to support partners with AMR risk assessment and management.

- Collaboration**
- Applied Research**
- Education and Training**

#### Co-design is key

To transform AMR from an overwhelming threat that defies action into an investment ready challenge for industries to tackle, we apply co-design principles to develop collaborative research projects with a clear pathway to translation and impact.



Fig. 5 SAAFE is forming partnerships across multiple sectors to help mitigate the threat of AMR.