Key Area 5

Promote research on Antimicrobial Resistance

Objective 16

Promote research on innovative technology and medical science

Objective 17

Promote research on behavioural science and psychology

Objective 18

Promote research on health and economic burden

Objective 19

Promote research on the contribution of environment to the burden of AMR



- 90. There are currently a number of international and local funding sources that are supporting research on AMR, such as respective university research funds, the Research Grant Council, the Innovative and Technology Fund, and the Health and Medical Research Fund (HMRF)⁴² of the Health Bureau. AMR has been identified as one of the thematic priorities of the HMRF and researchers can submit applications for funding support through the HMRF's annual open call.
- 91. In recent years, the role of the environment in the development of AMR has been increasingly recognized and studied. The current understanding states that the environment acts as a repository for pathogens, antimicrobial resistance genes and antimicrobial waste resulting from sewage and industrial pollution. Over time, pathogens exposed to these environments will develop AMR and will be further dispensed to the human, animal and aquaculture sector (**Figure 7**)⁴³.
- 92. Nevertheless, relevant knowledge in the local context are in general lacking. Hence, in addition to supporting ongoing research on the different well-defined aspects of AMR, research on the role of the environment in the evolution of AMR will be encouraged in the next Action Plan. Findings from these research will inform the development of additional surveillance and control measures of AMR in the environment.



Figure 7: The role of environment in AMR

Objective 16 - Promote research on innovative technology and medical science

Strategic Interventions

- 16.1 Promote development of novel diagnostics tools to aid diagnosis and treatment of infections and AMR
 - Promote research on the development of novel diagnostics tools, such as the feasibility of local adaptation of rapid point-of-care tests, which could reduce unnecessary prescription of antimicrobials

16.2 Promote development of novel preventive measures on AMR

 Promote research on novel preventive measures, such as infection control tools (novel surface disinfectants) and vaccines against MDROs

16.3 Promote development of novel antimicrobials or other alternative agents

• Promote research on novel antimicrobials or alternative agents, such as phage therapy, antibodies, immune therapy, lysins, gut polymers or probiotics

Objective 17 - Promote research on behavioural science and psychology

Strategic Interventions

- 17.1 Promote research on awareness and education regarding AMR, infection prevention and control, and antibiotic stewardship
 - Promote research on the effectiveness and cost-effectiveness of different interventions to reduce AMR in the local context
 - Promote research on the KAP trend towards AMR and infection control would also be beneficial in assessing the effectiveness of interventions

17.2 Promote research on promoting behavioural changes regarding the use of antimicrobials in the public

 Promote research on the understandings and changing misconceptions and behaviours about the use of antimicrobials, including the use of antibiotics in viral infections and the purchase of antimicrobials in community pharmacies without prescription

Objective 18 - Promote research on health and economic burden

Strategic Interventions

- 18.1 Promote research on estimating local health burden of AMR
 - Promote research on the local socio-economic burden of infections caused by AMR and MDROs will help inform policy makers of the scale of the problem and provide investment incentive for research and AMR control measures

Objective 19 - Promote research on the contribution of environment to the burden of AMR

Strategic Interventions

- 19.1 Promote research on role of environment in the evolution of AMR
 - Promote research on the role of environment in the evolution of AMR, including those on AMR gene in the environment and various organisms and their transfer, can inform future development of surveillance and control strategies
- 19.2 Promote research on preventive measures on the spread of AMR through the environment
 - Promote research on preventing the spread of AMR through the environment, for example, the use of probiotics in animal rearing and culture