

ANNUAL REPORT

2024



INTERNATIONAL
CENTRE FOR
ANTIMICROBIAL
RESISTANCE
SOLUTIONS

ACKNOWLEDGMENTS

ICARS would like to extend its thanks to all of our staff, partners, donors and collaborators around the world, whose time and support are instrumental to ICARS' ongoing work.

For questions or enquiries, please contact ICARS at contact@icars-global.org

Cover photo: Poultry farm, Tanzania 2025

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2024 YEAR IN REVIEW

2024 was a significant year for antimicrobial resistance (AMR), culminating in a gathering of global leaders acknowledging the growing threat of AMR and defining goals to work collaboratively to address this global challenge. The monumental event followed months of careful preparation and marks the start of a strengthened global focus on translating ambition into action. As a maturing organisation, with demonstrated experience in co-developing and implementing context-specific AMR solutions with low- and middle-income countries (LMICs), ICARS is in a strong position to facilitate the bridging of policy and research, delivering an important contribution to the global response to AMR in collaboration with our LMIC partners.

In this, our fifth Annual Report, we are proud to present some highlights from the past year, including the growth of our project portfolio and some promising emerging results from projects reaching completion. Furthermore, we are pleased to share updates on our expanding global outreach and advocacy efforts, developments in our project teams to strengthen capacity and generate impact, and new partnerships forged with countries, funders and organisations.

In 2024, ICARS expanded its global efforts to combat AMR by approving seven new projects across Africa, Asia, and Latin America, with a total new investment of 31.1M DKK (4M USD). These projects address critical AMR challenges, including reducing antibiotic use in agriculture and healthcare, enhancing use of surveillance data for response, and mitigating environmental AMR risks. Additionally, ICARS launched four Requests for Proposals to explore AMR's intersection with environmental dimensions, climate change, vaccines, and sustainability strategies. These new initiatives bring the ICARS-supported project portfolio to a total of 55 projects, in 25 countries and territories, engaged with more than 150 partners.

ICARS takes a holistic One Health approach to addressing AMR, with more projects than ever in implementation across multiple sectors.



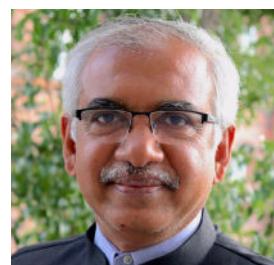
*HENRIK WEGENER,
Chair, Board of Directors*

In this report, we present some key themes across the portfolio as well as a broad overview of the ongoing efforts addressing stewardship and disease prevention. The different thematic areas represent opportunities for ICARS-supported projects to share experiences and learnings from across different settings.

As ICARS profile grows we continue to increase our outreach efforts. We were honoured to actively participate in national, regional and global dialogues surrounding the United General Assembly High-Level Meeting on AMR, 4th Global High Level Ministerial Conference on AMR, and the 4th G20 working group in Brazil and have both the G7 and G20 express support for the work of ICARS.

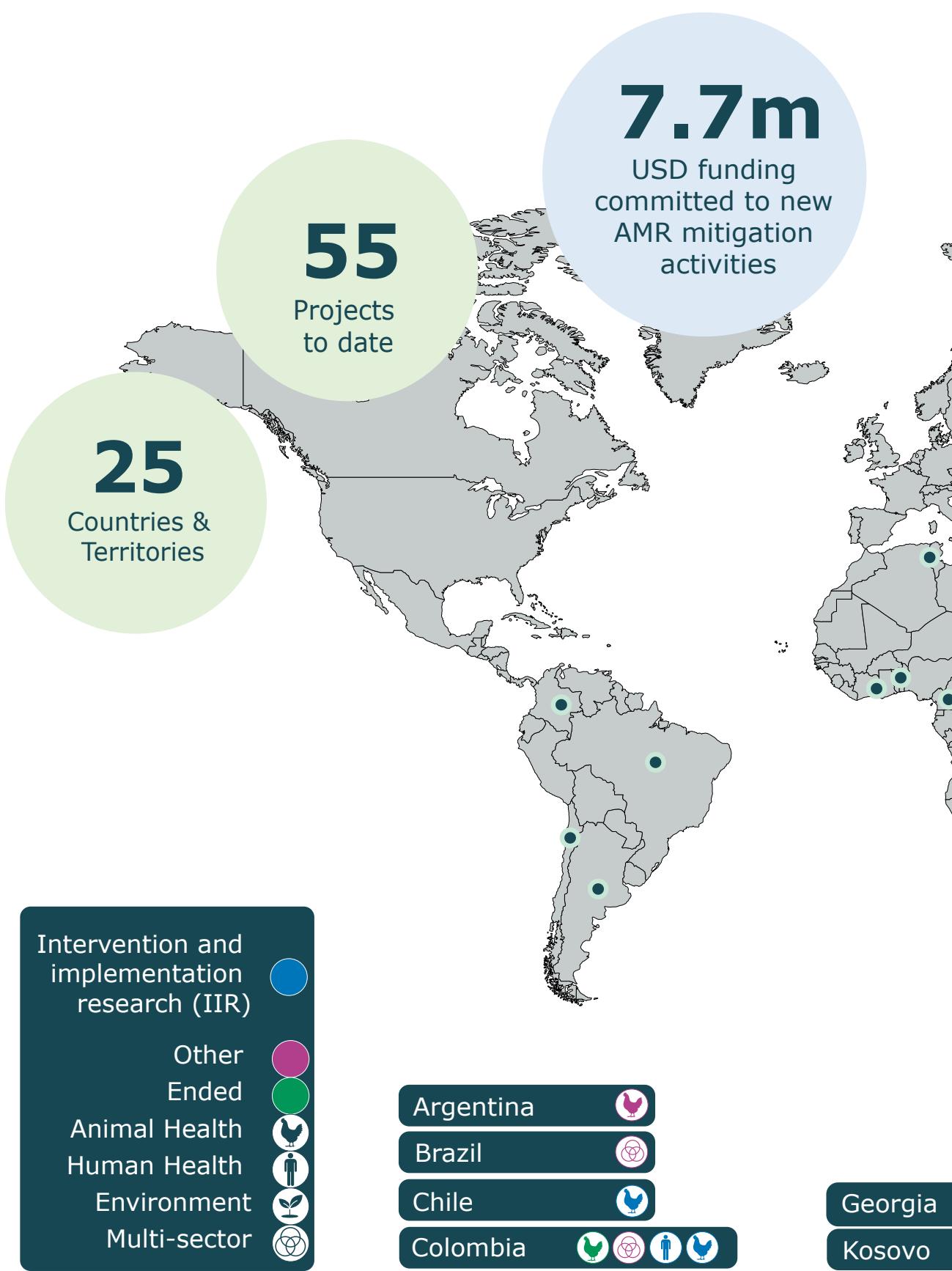
In 2024, we nurtured existing partnerships and forged new ones. We hosted our second Annual Partners Meeting, and supported the annual ReAct Africa and South Centre Conference. As well as welcoming six new Mission Partners, launching a five-year-long collaboration with the Centre for Cellular and Molecular Platforms (C-CAMP) and receiving funding from the UK's Department of Health and Social Care, expanding our existing partnership with Canada's International Development Research Centre, to bring the gender, equity, and climate aspects into AMR mitigation in LMICs.

As we step into early 2025, the world finds itself amidst a rapidly changing global political landscape, coupled with growing challenges for global health, food security and development. In this context of shifting priorities and competing resources, we mustn't lose sight of the progress and momentum we have built over the past year. Now, more than ever, it is essential to remain focused on identifying and implementing high-impact, cost-effective AMR solutions—an area where ICARS has consistently led the way since its inception. In the face of complex global challenges, our commitment to driving meaningful change through sustainable approaches, in collaboration with partners, remains unwavering.

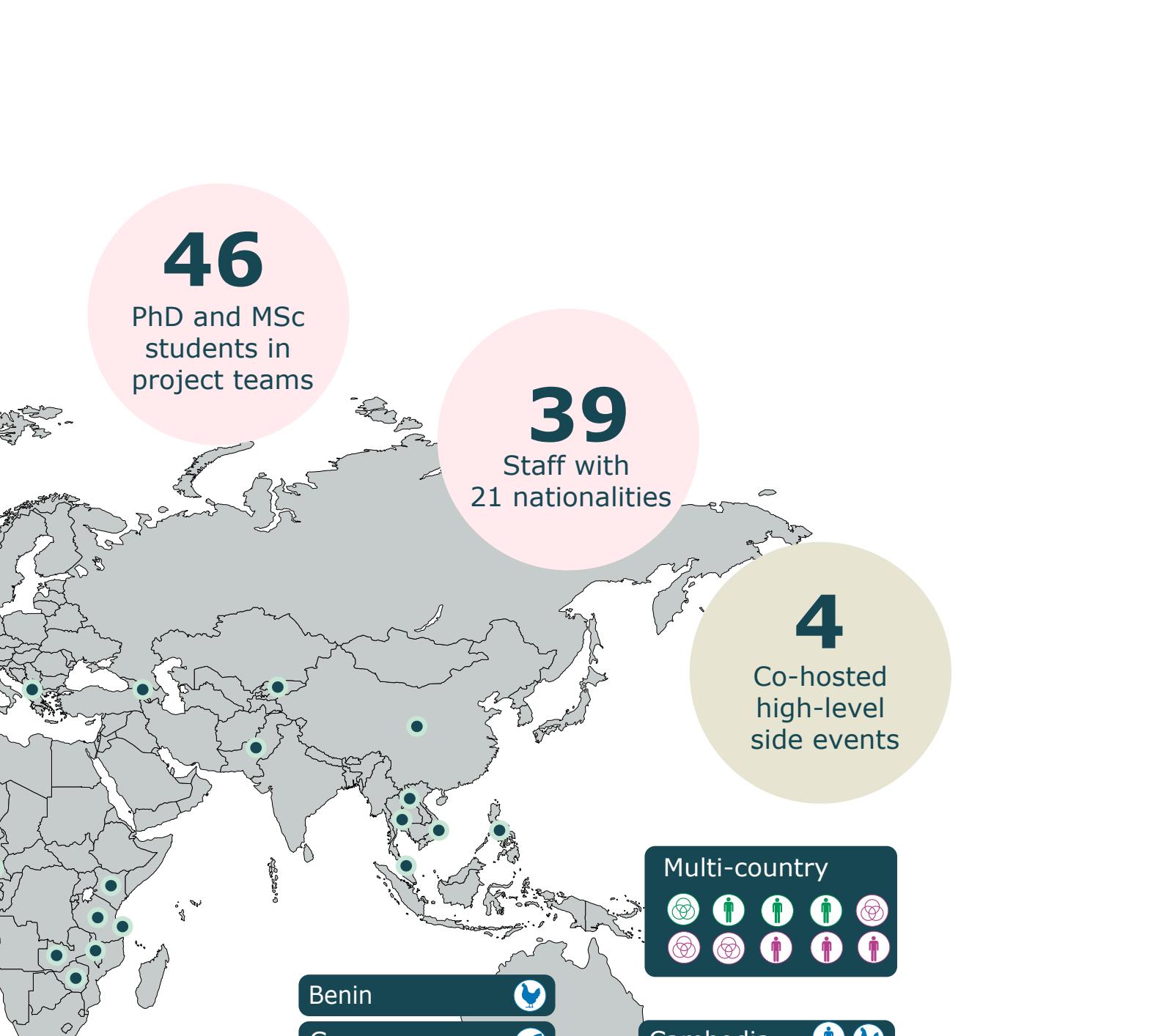


*SUJITH J. CHANDY,
Executive Director*

ICARS AT A GLANCE, 2024



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SOLUTIONS



46

PhD and MSc
students in
project teams

39

Staff with
21 nationalities

4

Co-hosted
high-level
side events

Multi-country



Benin	
Cameroon	
Ghana	
Kenya	
Malawi	
Tanzania	
Tunisia	
Zambia	
Zanzibar	
Zimbabwe	

Cambodia	
China	
Kyrgyzstan	
Lao PDR	
Malaysia	
Thailand	
Pakistan	
Philippines	
Vietnam	



ABOUT ICARS

VISION

We envisage a world where drug-resistant infections no longer pose a threat to the health of humans and animals, the environment, global food security and economic prosperity.

MISSION

To partner with low- and middle-income countries' ministries and research institutions to co-develop and test cost-effective, context-specific AMR solutions with potential for scale-up across the One Health spectrum, building on National Action Plans, and informed by intervention and implementation research.

WHY?

While much research has revealed successful solutions for tackling AMR, there is still a critical gap in translating this evidence into action. Even though many countries have developed AMR National Action Plans (NAPs), challenges remain for how best to prioritise and implement interventions to reduce AMR, especially in resource-limited settings. Furthermore, the growing rates of antimicrobial resistance in animals, humans, plants and the environment indicate that a siloed approach is not enough, and efforts to address AMR should span across the One Health spectrum.

HOW?

ICARS offers funding and technical expertise to collaboratively develop and tailor context-specific, evidence-based, and cost-effective solutions that have the potential for sustainable scale-up and transferability of findings both within and between countries and regions. ICARS works top-down with governments and policymakers and bottom-up with local research institutions and relevant stakeholders to identify and address AMR priorities. This is accompanied by capacity strengthening to deliver projects at a country and global level. ICARS not only partners with LMIC governments and the public sector but also works together with academia, private entities, communities, national, and regional stakeholders to ensure efficiency and support the uptake of the evidence generated.

GOVERNANCE

Founded in 2018 by the Government of Denmark upon dialogue with the World Bank, ICARS now operates as an independent international self-governing institution led by a global Board of Directors (see page 42). The Government of Denmark remains ICARS' largest contributor, providing substantial core funding (see Financial Results page 32).



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OUR STRATEGY

The ICARS strategy is based on the following interconnected pillars:

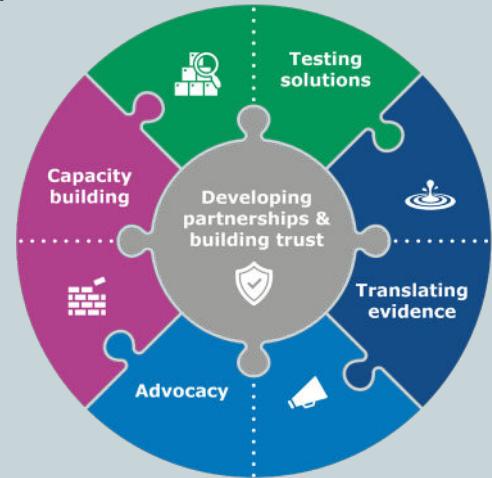
Pillar 1: Develop and test context-specific solutions for AMR mitigation

Pillar 2: Support the translation and uptake of existing evidence and innovation into policies, programmes, and practice

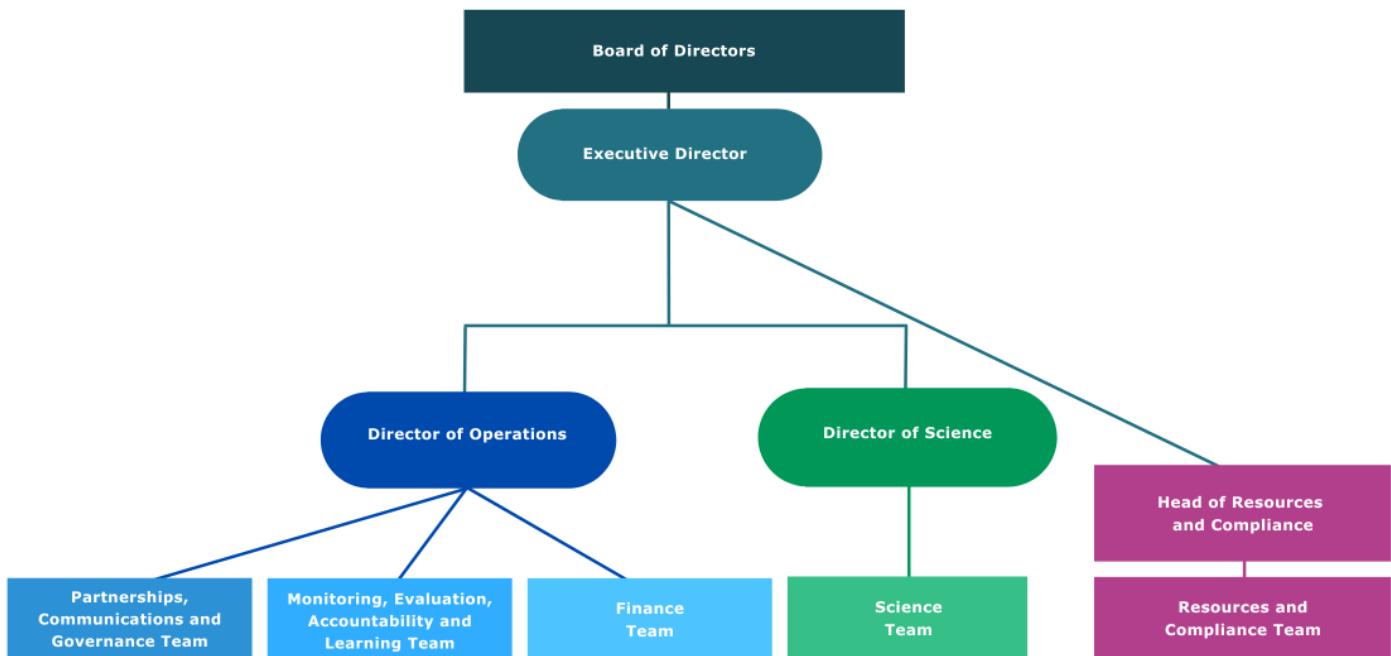
Pillar 3: Advocate for context-specific, country-owned AMR mitigation solutions

Pillar 4: Support targeted capacity and capability strengthening

Cross-cutting pillar: A trustworthy partner and platform for delivering context-specific and country-owned AMR solutions



ORGANISATIONAL STRUCTURE



OUR ACTIVITIES

1 Develop and test context-specific solutions for AMR mitigation

ICARS partners with LMIC ministries, research institutions and other key stakeholders to co-develop projects that test AMR solutions and support AMR NAP implementation. Engaged throughout the project lifecycle, providing both funding and technical support, ICARS helps local partners to prioritise challenges based on national priorities, tailor interventions, implement solutions, and disseminate findings for sustainable impact. Projects apply an intervention and implementation research framework including behavioural, economic, and policy components to enhance impact. Project teams aim to channel evidence from ICARS-supported projects into LMIC policies, programmes, and practices, both locally, regionally and globally.

Output 1.1 Produce new evidence-based and context-specific solutions for AMR mitigation in LMICs via a portfolio of projects

ICARS approved 7 new projects

-  **Cambodia**, 2025-2028: Reducing inappropriate antimicrobial use for inpatients with community-acquired pneumonia with a tailor-made antimicrobial stewardship programme – 599,370 USD
-  **Cambodia**, 2025-2028: Reducing total antibiotic use by 20% (in mg/kg) in small and medium-scale native broiler production through improved husbandry practices and adherence to prudent antibiotic use guidelines – 611,803 USD
-  **Cameroon**, 2025-2029: Preventing AMR spread from wastewater through urban agriculture - 672,228 USD
-  **Chile**, 2024-2028: Developing a surveillance, alert, and response system (SVAR) to reduce the use of antimicrobials in Chilean salmon farming – 689,548, including country contribution of 350,509 USD
-  **Colombia**, 2025-2028: Developing a multimodal strategy to decrease or limit the dissemination of Carbapenem-Resistant Enterobacteriales (CRE) in Colombian public healthcare institutions - 700,000 USD
-  **Kenya**, 2024-2027: Reducing Mastitis incidence and improving antibiotic stewardship in Kenyan smallholder dairy systems - 619,071 USD
-  **Tunisia**, 2025-2029: Constructed wetlands for mitigating antimicrobial resistance in reclaimed water used for irrigation of crops (CARMA) - 799,684 USD

Launched four requests for project proposals (RFPs) to:

Identify knowledge and implementation gaps to collaboratively address AMR and climate change in livestock and aquaculture systems

This 5-months project, led by the Ateneo School of Medicine and Public Health in the Philippines, aims to enhance understanding of how climate change influences the development and spread of AMR in livestock and aquaculture systems. The objectives include compiling knowledge on the intersection of these two global challenges and assessing climate-smart practices and technologies that can enhance or counteract AMR mitigation strategies across various contexts. Furthermore, it will provide an overview of existing national and regional policies addressing climate change and AMR in LMICs, identify successful models for collaborative AMR mitigation and climate-smart measures, and highlight knowledge and practice gaps in addressing these issues.

This project is funded by the UK Department of Health and Social Care (UK DHSC), with financial resources channelled through the International Development Research Centre (IDRC).

Develop a comprehensive resource guide on how to ensure the sustainable impact of AMR solutions

This project, led by the One Health and Development Initiative, Nigeria (OHD), and funded by Wellcome, will develop a resource defining sustainable impact in the context of AMR solutions and providing a comprehensive set of methodologies for achieving and measuring this impact across the One Health spectrum. These methodologies will be designed for integration into broader national systems and will complement the ICARS project model.



Advance vaccine uptake to mitigate antimicrobial resistance in low- and middle-income countries of South or South-East Asia

In partnership with the International Vaccine Institute (IVI), this 18-months project, led by the Ateneo School of Medicine and Public Health and IQVIA Asia Pacific, will address AMR by leveraging vaccine uptake in LMICs and integrating vaccine programmes with AMR control strategies at national and sub-national levels. With a focus on the Philippines and key pathogen-vaccine pairs (such as *Streptococcus pneumoniae* and *Haemophilus influenzae*) the project will use data from immunization and AMR surveillance programmes. By addressing data gaps and fostering collaboration through an AMR and Vaccines Network, the project seeks to develop a framework for reducing antibiotic use via vaccination while raising awareness of vaccines as a tool to control AMR, improve vaccine uptake, and promote AMR prevention in LMICs.

Address the environmental dimensions of AMR through intervention and implementation research

Cameroon

By leveraging stakeholder collaboration, genomic epidemiology, and farm-level interventions, the project will generate evidence to inform policy changes, enhance wastewater management practices, and promote sustainable agricultural productivity. (see page 8)

Tunisia

The project will generate evidence of constructed wetland effectiveness, develop strategies for national-scale implementation, and foster stakeholder engagement through awareness and capacity-building initiatives. (see page 8)



Implementation of the Wellcome funded initiative

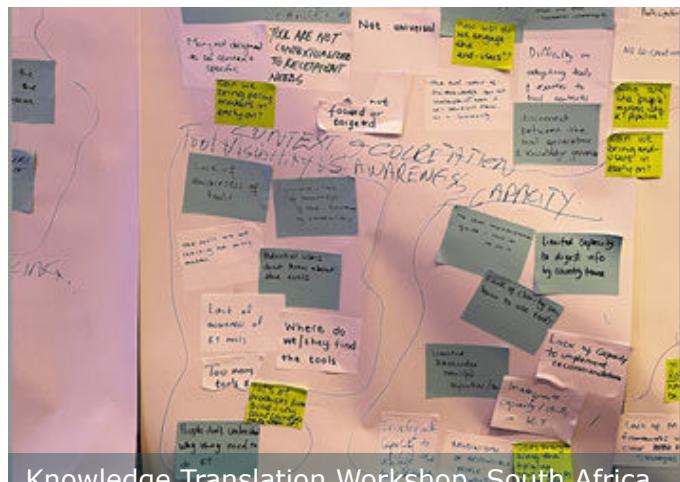
In March, the implementation of the Wellcome-funded initiative (\$8.2 million) to enhance efforts in combating antimicrobial resistance (AMR) across Africa started. In collaboration with ReAct Africa, this partnership supports ICARS' mission to co-develop sustainable, country-led AMR solutions with LMICs. Wellcome's support will strengthen ICARS' regional presence in Africa and expand its global impact on AMR mitigation. During the first year of grant implementation, work began on the first key activities:

Firstly, an RFP calling for the development of a sustainable impact resource guide was awarded to the One Health and Development Initiative, Nigeria (OHD). (See page 9)

Secondly, and as part of this broader sustainable impact work, ICARS co-hosted an interactive Round Table Workshop (RTW) on knowledge translation for AMR in African LMICs together with the Science for Africa Foundation. The purpose was to convene a group of 33 people to brainstorm why evidence is not being effectively translated into policy, programmes, and practice, particularly examining why existing tools and frameworks designed to facilitate this process are not being utilised.

Thirdly, an extensive mapping and scoping exercise was undertaken by ReAct Africa to identify the most appropriate modality and country location for ICARS' presence in Africa.

Finally, preparatory work began on the research projects set to be co-developed for Wellcome funding in 2025.



Knowledge Translation Workshop, South Africa



Knowledge Translation Workshop, South Africa

Output 1.2 Generate support for the uptake, implementation and scale-up of solutions in LMICs

ICARS conducted several scoping visits

Experiences from the co-development process with country teams has underscored the need for ICARS to gain a deeper understanding of the local context, stakeholder landscape, existing data, and capacity following a country's initial Expression of Interest. To enhance this approach, in 2024, the Science Team conducted scoping visits in 13 countries, fostering connections and gathering critical insights before advancing to the Concept Note stage with project teams.

Internal review of the ICARS co-development process

Since 2020, ICARS has implemented its unique co-development mechanism - a collaborative process with partners in LMICs to design intervention and implementation research projects to mitigate AMR. To date, ICARS has conducted and adapted this process with 29 project teams across 19 countries.

In late 2024, ICARS undertook an internal review of the co-development process, examining five case studies through interviews with country representatives and ICARS staff. The review aimed to capture experiences and effects, as well as lessons learned.

The findings highlight that ICARS' approach stands out from conventional donor processes through its iterative feedback, provision of grants for project development, and flexibility in project design. The process has shown transformative impact by helping focus broad concepts into targeted proposals while ensuring alignment with national priorities. Stakeholder engagement emerged as a consistently positive element, enhancing research relevance and supporting practical implementation. While the time-intensive nature of co-development was noted as a challenge, the review revealed varying capacity-strengthening outcomes across countries, particularly in implementation research skills.

The executive summary of the review is annexed to this annual report.



Scoping visit, Moldova, Human Health, 2024



Scoping visit, Animal Health, Bangladesh, 2024



Scoping visit, Aquaculture, Argentina, 2024



Scoping visit, Human Health, Uganda, 2024

Translating research into action: Preliminary results from targeted interventions

The early findings from our ongoing projects provide valuable insights into the potential impact of targeted AMR interventions. While the full scale of their benefits will emerge over time, these initial results reinforce the importance of evidence-based strategies in achieving long-term, sustainable change. They demonstrate the potential of well-designed, locally driven initiatives to optimise antibiotic stewardship and enhance health outcomes and productivity.

In Colombia, a holistic colostrum protocol combined with a vaccine is reducing the need for antibiotics in piglet rearing, in Kyrgyzstan the introduction of a rapid test has reduced antibiotic use in children by 24%, in Georgia, an antimicrobial stewardship programme has led to 60% compliance with Surgical Antibiotic Prophylaxis guidelines, and in Zambia, antimicrobial stewardship interventions are showing promise in improving antibiotic prescribing practices in hospitals.

The following examples illustrate how targeted strategies can lead to meaningful improvements in both human and animal health.

Colostrum management and antibiotic reduction in pigs, Colombia, 2022–2025

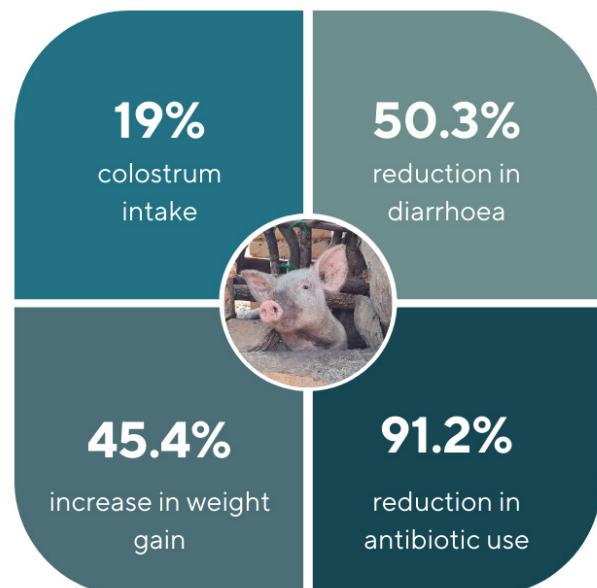
To improve animal health and reduce antimicrobial use, a study assessed the impact of an optimised colostrum management protocol (including sow vaccination, piglet rotation, and post-partum IgG/weight measurement) on piglet diarrhoea in Colombia. Conducted across multiple farms, the study aimed to lower piglet diarrhoea incidence and antibiotic use by enhancing colostrum intake and immunity.

The findings highlight the benefits of colostrum management in reducing antibiotic dependence in piglets; enhancing weight gain and survival rates; strengthening immunity through better colostrum consumption; lowering diarrhoea incidence; and improving overall herd health.

This intervention establishes a strong foundation for improved practices in pig farming. Scaling such strategies can further optimise animal health, improve farm profitability and promote sustainable livestock management.

Key preliminary results

- Disease prevention:** A 50.3% decrease in piglet diarrhoea.
- Antibiotic reduction:** The prevention of disease and the introduction of antibiotic-free feed has resulted in a dramatic 91% reduction in antibiotic feed use (13.6 mg/kg in control groups vs. only 1.2 mg/kg in intervention groups).
- Improved colostrum intake:** Piglets in the intervention group consumed 19% more colostrum.
- Enhanced growth:** Weight gain was 45.4% higher in the intervention group.
- Stronger immunity:** Higher immunoglobulin (IgG) levels were observed in piglets receiving optimised colostrum.





CRP testing in Kyrgyzstan, 2023

Facilitating appropriate antibiotic use in children, Kyrgyzstan, 2022–2026

Acute respiratory tract infections are among the most common reasons for antibiotic prescriptions in children, even though the majority of these infections are viral and self-limiting. The overuse of antibiotics fuels AMR, a growing global health crisis, and poses unique challenges in Kyrgyzstan, including:

- Limited diagnostic resources in primary care settings.
- Caregiver expectations for antibiotics despite limited clinical indications.
- Widespread availability of antibiotics over the counter.

In Kyrgyzstan, AMR was the third leading cause of death in 2019, according to the Institute for Health Metrics and Evaluation. With 732 deaths attributed directly to AMR, addressing inappropriate antibiotic use is an urgent public health priority.

A trial involving 1,204 children aged six months to 12 years in rural Kyrgyzstan has revealed that using C-reactive protein (CRP) point-of-care testing in primary healthcare settings significantly reduces antibiotic use in children under 12 years with acute respiratory tract infections (ARTI) without compromising patient safety.

Key preliminary results

- **Lower antibiotic use:** Antibiotic use was 24 percentage points lower in children who received CRP-guided care (36% vs. 60% in the control group).
- **Safety assured:** There were no differences in recovery time or in hospital admissions between the intervention and control groups.
- **Scalability potential:** Results suggest that CRP testing is an easily implementable and valuable tool in primary health care that markedly can reduce unnecessary antibiotic use in children with acute respiratory tract infections.

"This is a critical step forward in empowering healthcare workers with evidence-based tools to safely reduce unnecessary antibiotic use. It's an intervention that balances the needs of individual patients and the broader challenge of AMR."

Professor Talant Sooronbaev, Project Coordinator in Kyrgyzstan



MALDI-TOF Lab visit, Georgia, 2024

Optimising the use of antibiotics for Surgical Antibiotic Prophylaxis, Georgia, 2021 – 2025

Antimicrobial resistance poses a significant challenge in Georgia, prompting a focused response to mitigate its impact. While past initiatives emphasized strengthening surveillance systems and implementing infection prevention and control measures, the absence of concrete actions to establish antimicrobial stewardship (AMS) programmes highlighted an area for improvement.

In Georgia, as in many other parts of the world, there is a worrisome inappropriate use of antibiotics for surgical prophylaxis characterised by a high use of broad-spectrum antibiotics and prolonged dosing.

The ICARS-supported project, spanning across ten hospitals, concentrates on key surgical procedures including herniorrhaphy, hip joint surgery, endoprosthesis, and Caesarean section. Through four comprehensive Work Packages (WPs), the project aims to promote prudent antibiotic use for Surgical Antibiotic Prophylaxis (SAP) by instituting an AMS programme.

Key preliminary results

- Compliance with SAP guidelines:** All hospitals achieved a sustainable 60% compliance with the SAP guidelines after one year of implementation without any increase in the incidence of surgical site infections
- Capacity strengthening:** In partnership with the British Society of Antibiotic Chemotherapy, three open access courses have been launched to further promote best practices in SAP.
- National prioritisation:** National implementation and evaluation of the SAP guidelines have been included as a priority action in the new AMR National Action Plan.
- Positive economic analysis:** An economic analysis conducted at three hospitals indicates a positive cost/benefit ratio, further supporting the value of SAP guideline implementation in improving patient outcomes and reducing healthcare costs.

After 12 months, we achieved quite good results. In six out of ten hospitals, we went from zero compliance with national guidelines to over 60%...one of the main outcomes of the project was the inclusion of surgical antibiotic prophylaxis in the national strategy and National Action Plan on AMR for 2024–2030"

Marika Tsereteli, Project Coordinator



Site visit to Zambian hospital, 2024

Antimicrobial stewardship in Zambia, 2022 – 2025

As part of our commitment to improving healthcare outcomes, a 3-year AMS project supported by ICARS was implemented across three tertiary care hospitals in Zambia. This project aims to optimise antibiotic use in treating urinary tract infections (UTIs) and bloodstream infections (BSIs).

The results demonstrate the potential of AMS interventions to enhance rational use of antibiotics; reduce unnecessary prescribing; foster adherence to treatment guidelines; promote better patient outcomes; curb antimicrobial resistance; and contribute to sustainable healthcare practices.

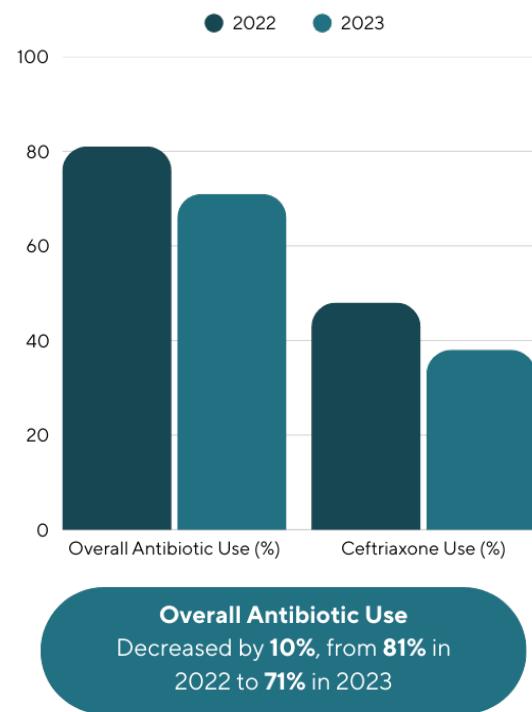
The AMS intervention has laid the groundwork for what is hoped to be significant progress in antibiotic stewardship in Zambia's tertiary care hospitals. Continued implementation and scaling of such initiatives can further optimise antibiotic use and improve adherence to treatment standards.

"It wasn't surprising in the past to find a patient on three antibiotics when they needed one. That's a cost to the hospital but also puts a patient at unnecessary risk. We've seen a significant reduction...largely due to awareness...that not every patient needs antibiotics. And also, the use of laboratory information and the kind of antibiotics."

Dr. Duncan Chanda, Director of the Adult Infectious Diseases Centre at the University Teaching Hospital in Zambia

Key preliminary results

- Reduction in antibiotic use:** Overall prevalence of antibiotic use decreased from 81% in 2022 to 71% in 2023, reflecting a 10 percentage points reduction.
- Targeted antibiotic prescribing:** Use of ceftriaxone, the most prescribed antibiotic, dropped from 48% in 2022 to 38% in 2023.
- Decline in Overall Prescriptions:** The average number of antibiotics prescribed per patient declined from 1.38 to 1.21, amounting to 12 fewer antibiotics prescribed per 100 patients.



OUR ACTIVITIES

2 Support the translation and uptake of existing evidence into policies, programmes, and practice

While many tools effectively mitigate AMR, most evidence comes from high-income settings with limited LMIC adaptability. ICARS bridges this gap by translating evidence into action with LMIC governments and stakeholders. We assess past research for suitability and cost-effectiveness, identify barriers and enablers, and build trust to support real-world implementation.

Output 2.1 Identify existing evidence and engage scientists and stakeholders in the development of projects to support uptake of existing evidence in LMICs

ICARS' holistic approach to addressing AMR

AMR is a complex, multifaceted challenge requiring a coordinated and interdisciplinary response. At ICARS, we work across a range of thematic areas to develop and implement sustainable, context-specific solutions that mitigate the spread of AMR in LMICs. Our approach spans multiple sectors, addressing key drivers of resistance and strengthening the capacity of healthcare systems, food producers, policymakers, and communities. By working on the same themes across different settings, ICARS aims to facilitate the sharing of knowledge and experiences across projects.

On the following pages we will briefly introduce our portfolio of projects within AMS (in the human sector) and disease prevention measures (in the animal sector).

Our portfolio includes initiatives across several critical themes:

- **Climate Change** – Understanding and addressing the links between climate change and AMR.
- **Environmental Dimensions of AMR** – Investigating how environmental factors contribute to the emergence and spread of resistance.
- **Antimicrobial Stewardship (AMS)** – Promoting responsible antibiotic use in human health, livestock, and aquaculture.
- **Infection Prevention Measures** – Enhancing infection prevention and control, and biosecurity strategies to reduce reliance on antibiotics.
- **Diagnostic Stewardship** – Improving access to and use of diagnostics to ensure targeted and appropriate antimicrobial treatment.
- **Gender and Equity** – Addressing disparities in AMR burden and ensuring inclusive, equitable solutions.
- **Monitoring of Antimicrobial Use (AMU) and AMR** – Strengthening surveillance systems and how they are used to efficiently track and respond to emerging drug-resistance.
- **Vaccination and immunity strengthening** – Promoting immunisation and immune response as a key strategy to reduce infections and antimicrobial use.



Strengthening AMS in LMICs

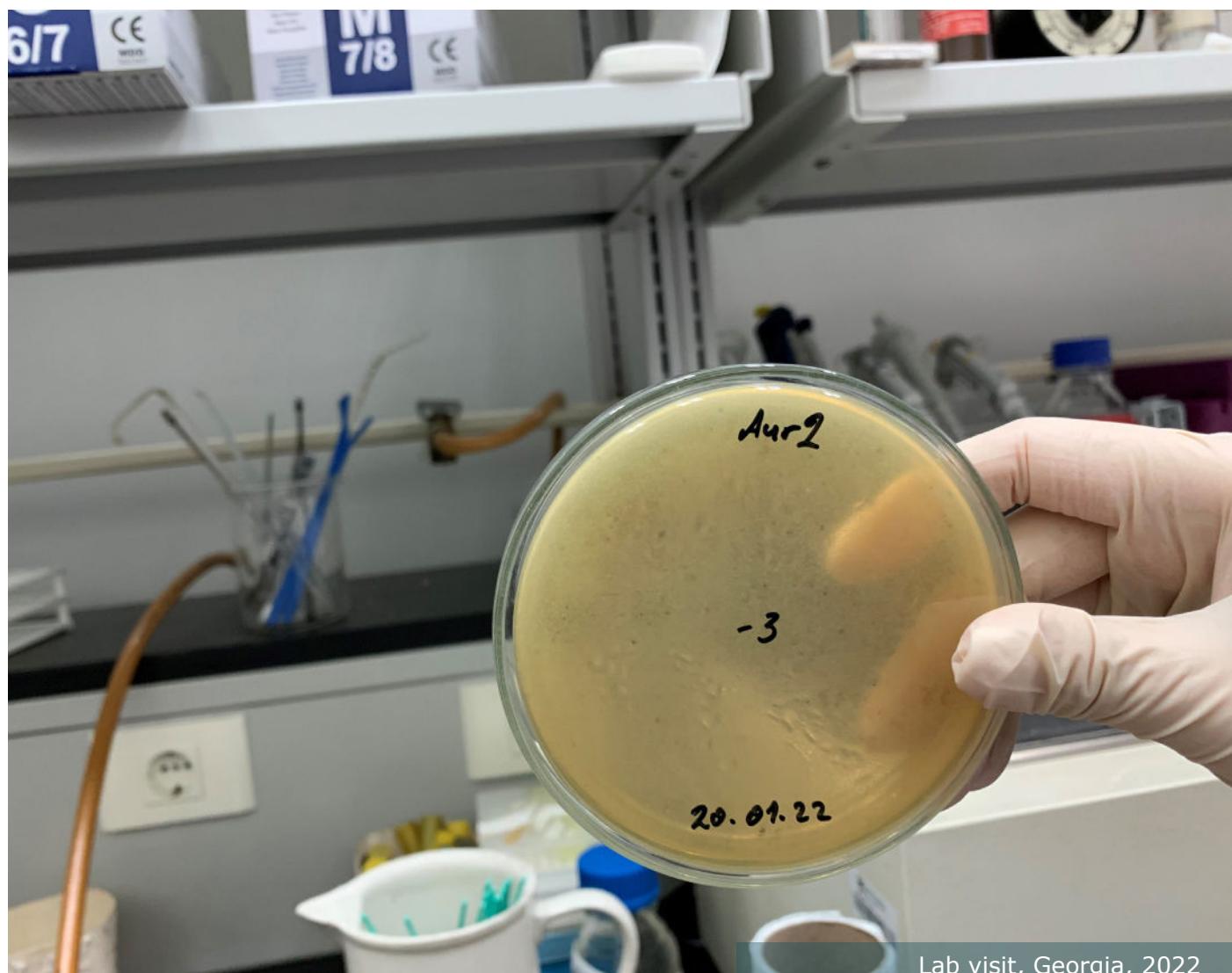
The inappropriate use of antibiotics remains a significant challenge in many LMICs, accelerating the emergence and spread of AMR. Robust AMS programmes are therefore essential to ensuring that antibiotics are used responsibly, adhering to the five rights of prescribing—right patient, right drug, right dose, right time, and right duration. Effective AMS practices not only improve patient outcomes but also minimise unnecessary antibiotic use, helping to preserve limited healthcare resources and maintain the effectiveness of existing treatments.

As part of our commitment to addressing AMR, ICARS actively supports AMS initiatives. ICARS is currently supporting 15 projects focused on AMS in human health, spanning multiple levels of care:

- Hospital-level initiatives (6 projects) to optimise antibiotic prescribing in clinical settings.

- Primary and community care programmes (5 projects) to strengthen AMS beyond hospitals.
- Cross-cutting interventions (2 projects) addressing both hospital and community-acquired infections.
- Policy and systems research (2 projects), including the TANDEM ABX framework (see description on page 17) and a Cambodia-based study on health system barriers and enablers.

Additionally, ICARS is investing in capacity strengthening through the DRIVE-AMS and BSAC courses, equipping healthcare professionals with the skills and knowledge to implement effective AMS practices. By supporting these projects, we aim to contribute to reducing inappropriate use of antibiotics, increasing the quality of health care, and ultimately strengthening healthcare systems in LMICs.



Lab visit, Georgia, 2022

Strengthening disease prevention measures in animal health

The excessive use of antimicrobials in animal production remains a critical challenge in many countries, as it accelerates the emergence and spread of AMR. Implementing rigorous disease prevention measures is therefore essential to reducing reliance on antimicrobials while maintaining animal health and productivity.

As part of our commitment to address AMR through a One Health approach, ICARS actively supports disease prevention initiatives in animal health. ICARS is currently supporting 10 projects focused on disease prevention in animal production systems, spanning multiple species and production contexts:

- Poultry production initiatives (5 projects) to improve husbandry practices, especially vaccination and biosecurity in either small, medium or large-scale chicken farms in Georgia, Tanzania, Zambia, Zimbabwe, Tunisia and Cambodia.

- Aquaculture interventions (2 projects) to enhance disease prevention and management in salmon farming in Chile and Tilapia and Pangasius fish farming in Vietnam.
- Dairy and swine health programmes (2 projects) addressing mastitis management in Kenya and improving colostrum protocols in Colombian pig farms.

These projects test diverse interventions, including farmer field schools, improved surveillance platforms and vaccination protocols, all tailored to local contexts. By supporting these projects, we aim to contribute to reducing disease incidence and antimicrobial use in animal production, thereby increasing food safety and security, animal welfare and farmer income.



Kenya dairy farm, 2024

Output 2.2 Stakeholders are engaged in activities to support adaptation and uptake of solutions

Implementation of the TANDEM-ABX planning project

Supported by a Novo Nordisk Foundation Planning Grant, this project links access and stewardship to ensure sustainable use of new last-resort antibiotics in LMICs. Initially, ICARS collaborated with the Global Antibiotic Research and Development Partnership (GARDP) and the ReAct Africa Network to strengthen regional networks in Sub-Saharan Africa and Asia. Partnerships were established with Aga Khan University Hospital Nairobi (Kenya), the Indian School of Business, and Christian Medical College Vellore (India). In November 2024, ICARS' TANDEM-ABX team held national and sub-national level stakeholder consultations in Kenya and India, focusing on antimicrobial stewardship to develop a sustainable use framework for the introduction of a new reserve-class antibiotic into the healthcare system. The project will conclude in spring 2025.

Understanding the impact of the Colistin ban on animal production in Argentina

In 2024, ICARS committed funding to a project that aims to document the process, experiences and impact of Argentina's ban on import and use of veterinary products containing colistin.

The project is expected to have the following outcomes:

- Established impact of the colistin ban on the prevalence of colistin-resistant *E. coli* isolated from poultry and pigs.
- Documented decision-making process, challenges and opportunities leading to the 2019 ban on colistin use in veterinary medicine.
- Documented and disseminated livestock industry adaptation process and impact of colistin ban.



TANDEM-ABX India meeting, 2024



TANDEM-ABX roundtable, India, 2024



TANDEM-ABX, Kenya workshop, 2024

OUR ACTIVITIES

3

Advocate for context-specific, country-owned AMR mitigation solutions

ICARS works to raise awareness of and mobilise international commitment to solutions informed by intervention and implementation research to deliver on AMR NAPs. Through strategic outreach and participation in events and conferences, ICARS aims to influence funders and policymakers to prioritise and increase their investment in AMR mitigation, especially in LMICs where the burden of AMR is greatest.

Output 3.1 LMIC stakeholders are engaged in the prioritisation of context-specific, IIR-informed AMR solutions

United Nations General Assembly

Throughout 2024, ICARS actively participated in national, regional, and global dialogues surrounding the United Nations General Assembly High-Level Meeting (UNGA HLM) on AMR. This included contributing to the Multistakeholder Partnership Platform's related action groups, publishing and promoting six key recommendations, speaking on a sustainable financing panel at the UN multistakeholder hearing in May, co-organising three side events highlighting LMIC perspectives, and attending the High-Level Meeting on AMR in New York.

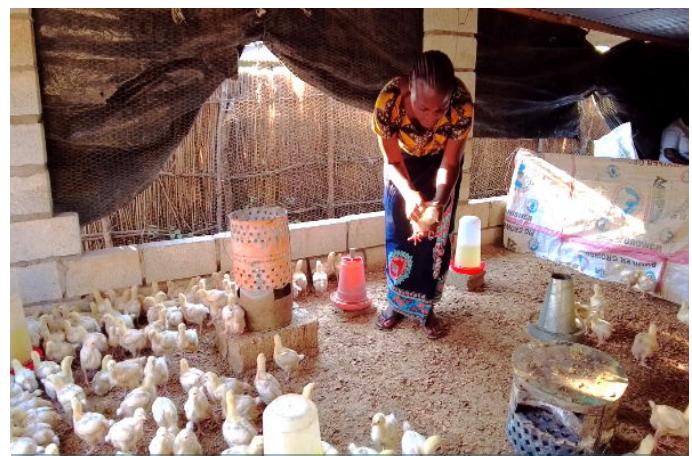
Following the declaration's approval, ICARS published a brief outlining the alignment between the declaration commitments and ICARS' strategic mission, with examples of ICARS-supported projects which contribute to delivering on the global commitments.



ICARS/One Health Trust UNGA side-event, 2024

Zambia projects showcased in news-style programme

In September, ICARS participated in an ITN Business news-style programme on antibiotic resistance, showcasing global efforts to combat the crisis. Highlighting the need for co-developing solutions with LMICs, ICARS' short film explored national AMR challenges in Zambia, the ICARS model, and showcased ICARS-supported projects working to mitigate AMR in healthcare and poultry farming. The ICARS film was played more than 55,000 times on LinkedIn over 4 weeks and continues to be featured on the ITN Business Hub.



Still from ITN news-style programme, 2024

Annual Partners Meeting at ICARS

On 29th October 2024, ICARS hosted its second annual partner's meeting, bringing together LMIC partners, Funding Partners, Mission Partners and Implementation Partners for an insightful exchange on topics of key importance to prevent and mitigate AMR.

The first thematic session centred around the importance of global collaboration in moving from declarations to actionable solutions. The session highlighted how international partnerships, as well as implementation and financial prioritisation of National Action Plans can strengthen the global mitigation of AMR.

The second thematic session addressed how to sustain AMR interventions and ensure their long-term impact through scalable, evidence-based strategies. Several country representatives shared their experiences and case studies of ICARS-supported AMR mitigation projects in action.

These discussions underscored the urgency of collective action in addressing AMR and highlighted the importance of partnerships and evidence-based interventions that are both effective and sustainable.

ReAct Africa and South Centre annual conference

The ReAct Africa and South Centre Annual AMR Conference brought together experts, researchers, and policymakers from across Africa and beyond to address the challenges posed by AMR. The event featured dynamic discussions, presentations, and collaborative sessions focused on innovative solutions and sustainable practices. As a conference partner, ICARS participated actively, sharing insights from its supported projects and learning from others working collaboratively to tackle this critical global health issue.

ICARS also used the opportunity to bring together project partners from the African region to exchange experiences, share learning, and prepare for the launch of our Community of Practice (see page 24).



ICARS project day, ReAct Africa Conference, 2024

Output 3.2 Output 3:2 Research funders, UN agencies and other stakeholders are engaged to support country-driven, context-specific solutions using IIR for the mitigation of AMR

77th World Health Assembly, Geneva

ICARS, the Ministry for the Interior and Health of Denmark, the AMR Action Fund and the Novo Nordisk Foundation, convened governments and key stakeholders for a high-level side event on AMR. Participants discussed financing for AMR interventions and the need to optimise current and new funding mechanisms for mitigation and significant scale-up of current efforts. This dialogue contributed to the various conversations leading up to the UNGA HLM on AMR to ensure tangible global actions and that mitigating AMR is seen as a financial priority.

The Fourth Global High-Level Ministerial Conference on AMR, Jeddah

Ministers, government representatives, the Quadripartite and other AMR stakeholders gathered in Jeddah, Saudi Arabia in November 2024. Under the theme 'From Declaration to Implementation,' the conference built on the recent political declaration emerging from the United Nations General Assembly (UNGA) and discussed how to translate the commitments into actionable, collaborative efforts to mitigate AMR. ICARS' Executive Director, Sujith J. Chandy spoke on a panel entitled 'Containing AMR through Public Private Partnerships, Raising Awareness and Promoting Action via Patient Groups, Community Leaders & Non-Traditional Influencers'.

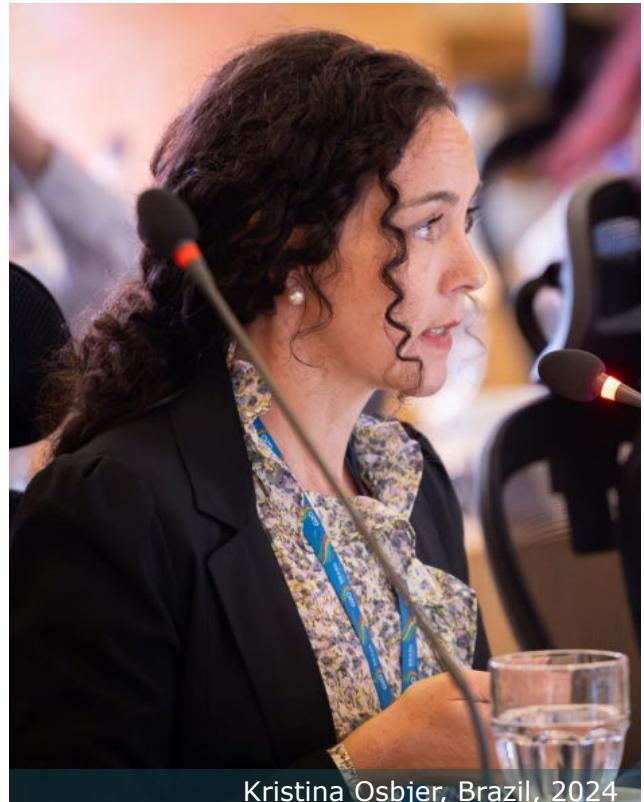


Sujith J. Chandy presents at the High Level Ministerial Conference, 2024

G7 and G20 express support for the work of ICARS

In September 2024, ICARS participated in a side-event at the 4th G20 Working Group Meeting in Natal, Brazil, sharing insights on effective governance and financing strategies to support national and global efforts against AMR.

In October, both the G7 and G20 Health Ministers released declarations that commit to addressing the growing threat of antimicrobial resistance (AMR), and that explicitly express support for the work of ICARS.



Kristina Osbjer, Brazil, 2024

G7 Health Ministers' Communiqué, Ancona, October 10-11, 2024

"75. We support enhancing fair and equitable access to health services and safe, effective, quality-assured and affordable vaccines, diagnostics, treatments including appropriate antimicrobials in low-resource settings and promote their prudent use following guidance from WHO's AWaRe (Access, Watch, Reserve) antibiotic book, WHO Policy Guidance on Integrated Antimicrobial Stewardship Activities, and nationally or regionally relevant adapted guidance. We also support the work of SECURE the Antibiotic Facility, the International Centre for Antimicrobial Resistance Solutions (ICARS), the Antimicrobial Resistance Multi-Partner Trust Fund."

G20 Health Ministerial Declaration on Climate Change, Health and Equity, and on One Health, Rio de Janeiro, October 31, 2024

"34. We will foster a One Health approach to international collaboration to monitor AMR and antimicrobial consumption through WHO's Global Antimicrobial Resistance and Use Surveillance System, WOAH's ANIMAL antiMICROBIAL USE (ANIMUSE) global database, FAO's Antimicrobial Resistance Monitoring (InFARM) system. We continue to support initiatives such as the Global AMR R&D Hub, CARB-X, GARDP and ICARS, as well as regional organizations that guide research, development and strategies to accelerate new AMR health technologies, alternatives to the use of antimicrobials, promote equitable access, global stewardship, and maximize public investment returns."

OUR ACTIVITIES

4 Support targeted capacity and capability building

Capacity and capability strengthening is essential to the process of creating a critical mass of people in governments, central agencies, and research equipped with the knowledge, skills, and competencies to implement AMR solutions that advance NAP implementation. Under this pillar, ICARS facilitates capacity and capability strengthening of project teams including LMIC policymakers, champions, prescribers, dispensers, consumers, and users of antimicrobials, amongst others, through relevant training and engagement as well as strengthening of human, veterinary and environmental health systems to address AMR.

Output 4.1 Local stakeholders and policymakers are trained and have access to best practices to support NAP implementation through IIR

Tanzanian hospital teams led and attended Antimicrobial Stewardship (AMS) training

Nine hospital teams from mainland Tanzania and Zanzibar attended a three-day course on AMS and infection prevention and control (IPC). The course was co-organised by the AMS team of Muhimbili National Hospital (who had participated in last year's training of trainers in Moshi, Tanzania) and the Radboud University Medical Center Drive AMS team. Before the course, hospital teams conducted a point-prevalence study (PPS) in their hospital, which they used during the course to identify a key antimicrobial use or IPC behavioural problem, decide how to measure it, propose an intervention, and develop a plan of action in their hospital. In 2025, the AMS and IPC interventions will be implemented, with support and evaluation from course trainers and external experts, ensuring core AMS and IPC teams capacity from participating regional hospitals is strengthened. Furthermore, the 2024 course participants will train AMS and IPC teams in other regional and district hospitals during 2025.

Community of practice launched

In October 2024, ICARS launched a digital platform to support skill development in AMR and AMU project management. Funded by Wellcome and open to all ICARS-supported project teams, the platform facilitates knowledge-sharing, collaboration, and access to key resources. Developed in response to project team feedback, it provides a space for direct engagement, experience exchange, and serves as a repository for ICARS internal webinars. After a launch seminar, the 2024 programme included webinars on:

- Evidence to policy – Kyrgyzstan case
- AMR and fungal infections
- Knowledge sharing seminar: Kosovo and Pakistan
- Strengthening antimicrobial stewardship for equitable access to novel antibiotics
- Implementation of an antimicrobial stewardship programme – Georgian case
- Responsive dialogue results
- Development of economic protocols



Growing number of students in project teams

The composition of multidisciplinary project teams is a key factor in the success of ICARS-supported projects. A crucial aspect of this approach is the engagement of MSc and PhD students, helping to strengthen in-country capacity and embed research locally. By the end of 2024, a total of 46 students (23 PhD and 23 MSc) were involved in ICARS-supported projects. Notably, in 2024, the Lead Researcher of an ICARS-supported project was the second person in Kyrgyzstan to earn a PhD. Meanwhile, in Georgia, the coordinator of the Surgical Antibiotic Prophylaxis project, achieved a significant milestone by completing ESCMID's AMS Certificate Programme as part of its inaugural cohort. Her achievement highlights the project's commitment to fostering sustainable AMS practices in Georgian hospitals.



Elvira Isaeva defends her PhD, 2024

Output 4.2 Human health, veterinary, agri-food and environmental sectors are supported to deliver on ICARS projects in partnership with LMICs

Gender and equity workshop, Bangkok

In November, ICARS convened 23 participants from diverse countries, sectors, and technical backgrounds to collaborate on gender and equity in AMR research. Among them were 14 representatives from ICARS-funded projects across Africa and Asia, including Malaysia, Thailand, Laos, Pakistan, Zimbabwe, Kenya, and Ghana. The week-long workshop took a practical, hands-on approach, equipping participants with the tools to apply gender and equity concepts directly to their AMR projects. By the end of the workshop, attendees had developed context-specific work plans to integrate these approaches into their ongoing initiatives, ensuring meaningful and sustainable impact.

Antimicrobial Susceptibility Testing (AST): Strengthening AST capacity to combat AMR (2021–2024)

From 2021 to 2024, a project implemented by ILRI and supported by ICARS aimed to strengthen antimicrobial susceptibility testing (AST) capacity in LMICs across Africa. Through AST training, the project has enhanced the quality and accessibility of AST for pathogens and in humans and livestock.

Key achievements include training of over 100 laboratory professionals across multiple countries and the development of a standardised AST training curriculum. The project has also fostered knowledge exchange through international webinars, hands-on workshops, and technical guidance on AST methodologies. By building local expertise and improving AST reliability, the initiative has contributed to sustainable AMR surveillance and stewardship, reinforcing ICARS' commitment to evidence-based interventions.

A key learning has been that decentralised, in-country training is perceived to be more effective than centralised programmes, ensuring greater participation and impact. Additionally, overcoming resource and infrastructure challenges, such as access to essential equipment and power stability, is crucial for sustaining AST capacity in the region.



Workshop participants in Bangkok, 2024

OUR ACTIVITIES

X A trustworthy partner and platform for delivering context-specific and country-owned AMR solutions

Cross
Cutting
Pillar

This pillar ensures ICARS operates effectively, attracting top talent and building trust with partners and funders. Following its transition to independence in 2021 and the establishment of an international Board of Directors, ICARS has continuously strengthened its organisational foundation. In 2024, the Board continued to provide valuable strategic leadership, new policies were implemented, and core teams expanded. Additionally, ICARS welcomed new Mission Partners, Funding Partners, and Strategic Funding Partners, further enhancing its global impact.

Output X.1 Operate as a well-functioning organisation working at an international level, with the ability to attract and retain the best talent while maintaining an agile structure seeking partnerships with a range of stakeholders

ICARS and C-CAMP joined forces to address AMR in India and beyond

In October 2024, ICARS and the Centre for Cellular and Molecular Platforms (C-CAMP) signed a Memorandum of Understanding (MoU) for a five-year long collaboration that will fund and support innovative solutions to address the growing threat of AMR across the One Health spectrum in India and beyond. This new partnership lies under the India AMR Innovation Hub and aligns with India's new National Action Plan 2.0 on AMR. The partnership aims to expand its scope through joint fundraising initiatives, ensuring a broader impact and sustainability. ICARS looks forward to the continued collaboration with C-CAMP in the coming years.

Two new members joined the Board of Directors

ICARS' Board of Directors welcomed two new non-voting members representing the World Bank and the Quadripartite organisations: Juan Pablo Uribe, Global Director for Health, Nutrition and Population at the World Bank, and Thanawat Tiensin, Director of the Animal Production and Health Division at the Food and Agriculture Organization of the United Nations. In 2024, the Board gathered five times for meetings and strategic discussions, including an in-person meeting in New Delhi, India, where they met with the Danish Ambassador to India, H.E. Freddy Svane, and participated in the ICARS – C-CAMP MoU signing event.





Cambodia Mission Partner signing, 2024

Six new countries joined ICARS as Mission Partners

Significant strides were made in 2024 as ICARS expanded its network of Mission Partners by welcoming six new countries from three continents onboard: Brazil, Ghana, Malawi, Colombia, Chile and Cambodia. These countries are now part of a global network that is dedicated to actively supporting ICARS' mission and committing to mitigating AMR, both within their own borders and across regions.

The ICARS team grew

With approximately 40 staff, from more than 20 countries, the ICARS team saw significant growth in 2024, enhancing its capabilities across various areas:

Science Team: Expanded with new advisors in AMS, IPC, and AMR mitigation, and a team assistant to support administrative needs.

Monitoring, Evaluation, Accountability, and Learning (MEAL) Team: Enhanced its capacity with new senior roles and additional staff, strengthening ICARS' commitment to data-driven decision-making, accountability, and improving the documentation of project impact.

Resources and Compliance Team: Established in 2024, it now oversees administration, IT, security, legal affairs, and HR, with expanded expertise in legal and HR functions to support ICARS' growth.



The ICARS Team, September, 2024

Output X.2 Ensure that ICARS fulfils a niche gap in AMR mitigation worthy of investment by donors

Funding received to increase focus on gender, equity and climate change

The UK's Department of Health and Social Care (DHSC) as part of its Global AMR Innovation Fund (GAMRIF), Canada's International Development Research Centre (IDRC), and ICARS joined forces to bring the gender, equity, and climate aspects into AMR mitigation. Through IDRC, DHSC is supporting ICARS to fund several scoping and research projects focused on understanding and addressing these interlinked global challenges. With funding from DHSC (1.8 million USD) and ICARS (500,000 USD), the project will run from June 2024 to December 2026.

Team Europe Initiative inception project launched

Funding was received for a first phase of activities contributing to building sustainable systems for inclusive AMR prevention, detection, mitigation and response in Africa. This is part of the Team Europe Initiative (TEI) antimicrobial resistance (AMR) component. Denmark, represented by the Department of Multilateral Cooperation and Policy of the Danish Ministry of Foreign Affairs have contributed DKK10 million, and ICARS has co-funded this initiative with an additional DKK10 million (approximately 2.7 million USD in total). The project will run from December 2024 to December 2027.

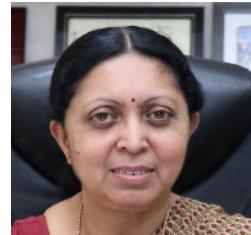


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**NON-VOTING MEMBER
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Juan Pablo Uribe
Global Director, Health,
Nutrition and Population,
World Bank

ANNEX 1 - CO-DEVELOPMENT PROCESS REVIEW

EXECUTIVE SUMMARY

This report presents the findings from an internal review of co-development undertaken by the International Centre for Antimicrobial Resistance Solutions (ICARS) in late 2024.

'Co-development' is a collaborative process that ICARS undertakes together with partners in low- and middle- income countries (LMICs) to design intervention and implementation research (IIR) projects.

The process commences after ICARS' acceptance of an Expression of Interest from LMICs and involves a mix of representatives from LMICs – including researchers, relevant ministries and/or private sector representatives- as well as ICARS staff. The process involves analysing the causes and consequences of a focal anti-microbial resistance (AMR) problem and designing intervention and implementation research to test context-specific solutions to address this. The process ends with the submission of a completed project proposal which is funded by ICARS after a successful review by ICARS' Technical Advisory Forum (TAF).

ICARS' co-development process has been evolving since it was first introduced in 2020. Since then, ICARS has conducted and adapted its co-development process with 29 IIR project concepts across 19 countries. Despite iterations to the process, ICARS has strived to embed its core principles of partnership, country-ownership, One Health, solution-focus, and sustainability in the co-development process.

This review was undertaken to capture the experiences and lessons from co-development to date. Given ICARS' cumulative experience with co-development and recognizing that the outcomes of IIR projects may take time to materialize, it was considered a timely opportunity to document the experiences and effects of the process, while also capturing ICARS' broader contributions beyond scientific research. At the same time, learnings could be harvested to further refine and consolidate the co-development process.

This review has been built upon a case study approach, drawing on cases from five IIR projects. Case selection was undertaken with the aim of reflecting the geographic coverage and sectors of ICARS' portfolio, as well as including a mix of earlier and more recent experiences with co-development. A total of 16 people were interviewed for these cases (8 representatives from country projects and 8 ICARS staff).

The review has focused on capturing perceptions and experiences around six key themes: 1) comparing co-development to other donor proposal processes; 2) the impact of co-development on the proposal and research focus; 3) capacity strengthening in co-development; 4) stakeholder engagement; 5) challenges and barriers in co-development; and 6) recommendations for improving the co-development process.

The review highlights several features that distinguish ICARS' co-development approach from conventional donor proposal mechanisms. These included the consistent and iterative feedback to the project team provided by ICARS throughout the process, the provision of a co-development grant – particularly to support stakeholder engagement and data collection - the flexibility of the process which allows adaptation of project designs based on emerging insights and local realities, as well as the focus on building trust, strengthening capacity, establishing ownership among stakeholders, and fostering long-term collaboration.

The review illustrates how the co-development process has had a transformative impact on the focus and quality of proposals developed. One of the key outcomes of the co-development process identified was how the process helped to focus broad intervention concepts into targeted and impactful proposals. The process was seen to support and strengthen the alignment of proposals with national priorities and implementation realities, and to ensure that the root causes of antimicrobial resistance were being addressed with proposal interventions. Furthermore, extensive stakeholder engagement was seen to facilitate learning within project teams, ensure buy-in from all sectors, and enrich proposals by integrating practical insights.

Capacity strengthening through co-development was the theme with the greatest diversity across the five country cases. Strengthened capacities in IIR was most mentioned across the different cases, while some country cases also highlight strengthened capacities for project management, from the co-development experience. There was a range of strengthened capacities from co-development identified that were unique to each case – such as improved ‘soft skills’ in Cambodia, and improved awareness of gender equity and intersectionality in Colombia. The broader application of new or strengthened capacities – to work beyond the ICARS'-funded projects - was not apparent across all cases. However, in some cases the relevance of new knowledge and skills for future work was highlighted, and in the case of Tanzania, strengthened knowledge in IIR appeared to have been shared widely beyond the project.

Stakeholder engagement was consistently identified as a positive element of the co-development process. It was seen to enhance the relevance of research to policy needs, as well as supporting contextualization of planned interventions and ensuring these could be practically implemented. Stakeholder engagement was also seen to strengthen working relationships and pave the way for smooth implementation. In some cases, stakeholder engagement during co-development was also seen to have some unique catalysing effects. For instance, in Tanzania, this resulted in sparking interest in and eventual support of IIR projects in Zanzibar, and in Kosovo, stakeholder engagement and the momentum generated from co-development enabled the project to realise early successes in its vision for scale-up of AMS across primary health care facilities.

Many common and unique challenges and barriers to co-development were identified across the cases by project teams. The intensive time commitment required for co-development was mostly commonly highlighted across the cases, while some of these also noted the challenges and stresses encountered in coordinating diverse stakeholders. Language presented a barrier to full participation in some cases, while others highlighted challenges in working with ICARS' tools, particularly the budget template.

Reflections from ICARS staff highlighted co-development positively, and as a process that yields many benefits. ICARS staff valued the structured framework for co-development that has been developed over the years but emphasised that the process often required adjustments to fit specific contexts. Staff emphasised the value of in-person engagement during co-development and the importance of ensuring the right people were engaged in the process from the outset. ICARS staff gained valuable scientific knowledge, skills in facilitation, and insights into different operating contexts from their involvement in co-development processes. They reflected that ICARS' role in the process is one of technical facilitation and providing additional technical insights into the process.

Several recommendations were made and can be gleaned from the review. Getting the right team of people engaged from the outset is crucial for an effective and efficient co-development process. As such, consideration should be given to how to engage the most appropriate researchers for each country context and project. Advisors involved in co-development should have appropriate technical expertise and language skills for the project and context. The issue of tight timeframes and difficulty coordinating across multiple stakeholder schedules point to a need to ensure sufficient time and realistic deadlines for the co-development process. Mixed formats should continue to be used – both in-person and online work - for conducting the co-development process and retaining flexibility in the process. To improve the process and address some of the challenges raised, it would be good to consider further guidelines to accompany the proposal template, further translation of materials, and alternative modes of project funding and co-development.



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GOAL ACHIEVEMENT 2024

The ICARS strategy spanning from 2022 to 2026 encompasses a structured framework of outputs, outcomes, and pivotal activities across each of ICARS pillars for this designated period.

ICARS continues to make strong progress towards its 2022-2026 strategy, achieving key milestones in project approvals, implementation, and global engagement. Our work has strengthened evidence generation, capacity building, and international recognition of IIR as a vital approach to combatting AMR.

While we successfully met most targets, challenges remain in securing external funding and finalizing a resource management framework. Work on these important tasks – as well as developing a set of guidelines that support the uptake of generated evidence from ICARS-supported projects is ongoing and we remain committed to addressing these gaps, mobilizing resources, and enhancing policy integration to maximize our impact.

Goals/Indicators	Target	Result
Outcome Pillar 1: Evidence from ICARS projects is channeled into LMIC systems, policies, programmes and practices		
1.1. Number of EoIs approved or validated for co-development after scoping	10	10
1.2 Number of approved project proposals	6-8	7
1.3 Percentage of projects and supporting activities on track in implementation	75	80
Outcome Pillar 2: Existing evidence is integrated into LMIC systems policies, programmes and practices		
2.1 Set of guidelines that support the uptake of generated evidence from IC-ARS-supported projects	1	0
Outcome Pillar 3: National and international actors recognize the need for context specific, country owned AMR solutions and mobilize more funding and support for this		
3.1 Number of side meetings organized or participated in at World Bank Spring meetings, World Health Assembly, UN General Assembly, and High Level Inter-ministerial Meeting	4	5
3.2 Number of actors influenced into recognising IIR as a means to mitigate AMR	3	3
Outcome Pillar 4: People and health systems (human, veterinary and environmental) in partner countries have improved capacity to mitigate AMR using IIR		
4.1 Number of regional partnership events	3	3
4.2 Number of training videos developed that address areas specific to IIR research project in co-development and implementation	7	5
Outcome Pillar X: Recognition as a trustworthy partner and implementation platform for developing context-specific and country-owned AMR solutions		
X.1 External funding that ICARS attracts in 2024 equals the funding from the Danish government (DKK Million)	74	22.7
X.2 Model for resource management (the amount of time used on project support both during co-development and implementation) developed	1	0

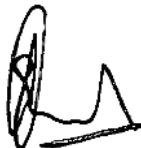
STATEMENT BY THE MANAGEMENT ON THE ANNUAL REPORT

The Executive Management and the Board of Directors have today considered and approved the annual report of the International Centre for Antimicrobial Resistance Solutions (ICARS) for the financial year 1 January – 31 December 2024. The annual report has been prepared in accordance with the State Accounting Rules and ICARS statutes.

In our opinion, the annual report gives a true and fair view of ICARS's financial position as per 31 December 2024 and of the results of ICARS's operations and cash flows for 2024. Further, it is our opinion that the management's review includes a true and fair account of the development in the operations and financial circumstances of ICARS.

Copenhagen, 29 April 2025

Executive Management:



Sujith J Chandy,
Executive Director



Helle Englund Krarup,
Director of Operations



Kristina Osbjer,
Director of Science

Board of Directors:



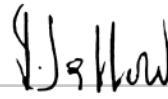
Henrik Wegener, Chair



Renu Swarup, Vice-Chair



Jimmy Smith, Member



Isatou Jallow, Member



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INDEPENDENT AUDITOR'S REPORT

To the Board of Directors of the International Centre for Antimicrobial Resistance Solutions (ICARS)

**This is an English translation of the Danish Auditor's report. The Danish language version shall prevail on any question of interpretation or otherwise.*

We have audited the financial statements of ICARS for the financial year 1 January to 31 December 2024 which include the accounting practices applied, profit and loss account, balance sheet and notes to the accounts. The financial statements are prepared according to the State accounting rules.

In our opinion, the financial statements are, in all material respects, prepared in accordance with the State accounting rules.

Basis for opinion

We conducted our audit in accordance with public auditing standards. The audit is conducted on the basis of section 2(1)(3) of the Auditor General Act, cf. Consolidated Act no. 101 of 19 January 2012.

Our responsibilities under public auditing standards are further described in the section "Rigsrevisionen's responsibility for the audit of the financial statements" in the auditor's report. The Auditor General is independent of ICARS in accordance with section 1(6) of the Auditor General Act.

We believe that the audit evidence obtained is sufficient and appropriate to provide a basis for our opinion.

Highlighting of matters relating to the audit

We draw attention to the fact that budget figures/amounts in USD have been included as comparative figures in the profit and loss account. These figures have not been audited, as the accounts show, and therefore we do not express any assurance with regard to them.

Management's responsibility for the financial statements

The management is responsible for the preparation and fair presentation of these financial statements in accordance with the State accounting rules. The management is also responsible for such internal control as it deems necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's responsibility for the audit of the financial statements

Our goal is to gain a high level of assurance that the financial statements as a whole are free from material misstatements, regardless of whether these are due to fraud or error, and to submit an auditor's report with an opinion. A high degree of certainty is just that, but it is not a guarantee that an audit carried out in accordance with the standards for public audits will always discover significant misstatements when such exist. Misstatements can occur due to either fraud or errors and can be considered material if it could be reasonably expected that individually or in aggregate they would have an impact on the financial decisions that the users of the financial statements make based on those statements.

As part of an audit carried out in accordance with the standards for public audits, we make professional estimates and maintain a level of professional scepticism during the audit. We also:

- Identify and assess the risk of material misstatements in the financial statements regardless of whether these are due to fraud or error, and we structure and carry out audit actions in response to these risks and procure audit evidence that is sufficient and appropriate to form the basis for our opinion. The risk of not discovering material misstatements caused by fraud is higher than it is for material misstatements due to errors, as fraud may involve conspiracies, document forgery, intentional omissions, misdirection or the overriding of internal controls.
- Gain an understanding of the internal controls relevant to the audit in order to prepare audit actions that are appropriate to the circumstances, but we do not use this understanding to express an opinion on the effectiveness of [the company's] internal controls.
- Examine whether the accounting practices that are used by the management are appropriate and if the accounting-related estimates and associated information prepared by the management are reasonable.

We communicate with the top management team about things such as the planned scope and time of the audit and significant accounting-related observations, including observations about material deficiencies in internal control that we identify during the audit.

Opinion on management's review

The management is responsible for the management's review.

Our opinion on the financial statements does not cover the management's review, and we express no form of assurance when it comes to our opinion on it.

In connection with our audit of the financial statements, it is our responsibility to read the management's review and in that context consider whether it is significantly inconsistent with the financial statements or the knowledge we have gained during the audit or if it otherwise seems to contain material misstatements.

Our responsibility is also to consider whether the management's review contains the information required pursuant to the State accounting rules.

Based on the work performed, it is our opinion that the management's review is consistent with the financial statements and has been prepared in accordance with the requirements of [the state accounting rules]. We have not found any material misstatement in the management's review.

Declaration under other legislation and regulations

Statement on critical legal audit and performance audit

The management is responsible for ensuring that the transactions covered by the financial statements are in accordance with notified appropriations, statutes and other regulations, as well as with agreements entered into and common practice. The management is also responsible for ensuring that due financial considerations are taken in terms of managing ICARS and the funds covered by the financial statements. In that connection, the management is responsible for establishing systems and processes that support frugality, productivity and efficiency.

As part of our audit of the financial statements, it is our responsibility to carry out a critical legal audit and performance audit in accordance with the standards for public audits. This means that we assess the risk that there are material breaches of rules in the transactions covered by the financial statements or significant management deficiencies in the systems and processes established by management. Based on the risk assessment, we determine the defined topics for which we will perform a compliance or performance audit.

In a critical legal audit, we test whether there is a high degree of assurance that the transactions covered by the selected areas are in accordance with agreements entered into and common practice. In our performance audit, we determine whether there is a high degree of assurance that the selected systems, processes or transactions covered by the selected areas support due financial considerations when managing the funds covered by the financial statements.

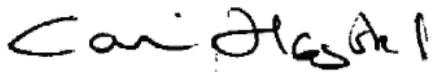
Our audit of each selected item is designed to obtain sufficient appropriate audit evidence to provide a basis for expressing a conclusion with a high degree of safety on that item. An audit cannot provide complete safety to detect all breaches or management deficiencies. As we have only performed a compliance and performance audit of the selected topics, we cannot express a Safety opinion that there are no material breaches of rules or significant management deficiencies in areas outside the selected topics.

If, on the basis of the work performed, we conclude that there are grounds for significant criticism, we will report this in this opinion.

We have no significant critical observations to report in this respect

Copenhagen, 29 April 2025

Rigsrevisionen
CVR no. 77 80 61 13



Carina Høgsted
Office Manager



Finn B.L. Andersen
Special Consultant

FINANCIAL RESULTS 2024

The year 2024 is marked by the significant achievements highlighted here and in the above sections of this annual report. It has been another year of ICARS' growth as an organisation and as a trusted partner. The financial highlights of 2024 include securing upstream grants from external funding sources and the continued development of new projects, while the existing projects continued implementation throughout the year.

The 2024 Financial Statements of ICARS are prepared in accordance with the State Accounting Act, Order No 116 of 19 February 2018 on State Accounting, and the Ministry of Finance's Financial Administrative Guidelines, hereinafter jointly referred to as State's accounting rules, and consist of the following elements:

1. Statement of Financial Performance for the period ended 31 December 2024 (Figure 2)
2. Statement of Financial Position as of 31 December 2024 (Figure 3)
3. Notes to the Financial Statements

In addition, we present here Statement of Comparison of Budget with the Actual Amounts for the period ended 31 December 2024 (Figure 4) that shows our financial results of our core funding received from the Danish Ministry of the Interior and Health.

The 2024 Financial statements are prepared based on ICARS being a going concern, based on ICARS grant and budget plans for 2022-26 in the Danish finance law.

Highlights of 2024 Financial Results

ICARS 2024 core budget, based on the funding from the Government of Denmark, amounted to DKK 86.4M, including the transfer of 2023 surplus funding in the amount of DKK 12.2M.

The total ICARS 2024 spending before interest amounted to DKK 94M, representing 89% of the annual budgeted amount.

The unspent balance in the amount of DKK 18.3M is recognized in the 2024 accounts as part of deferred income and transferred to the financial year 2025 as a surplus revenue.

In 2024 ICARS committed grants and made other provisions for the total amount of DKK 54.9M. This is an increase of DKK 15M over 2023 and is a representation of a steady development of ICARS as an important player in the global work on AMR-mitigation in low- and middle-income countries using implementation and intervention research.

During 2024, project work continued for the Wellcome and Novo Nordisk Foundation grants secured in 2023, and in 2024 ICARS secured grants from the IDRC and MFA in the amount of DKK 22.8M. The details and amounts relating to these projects are included in Table 1 below. The revenue associated with these funding sources will be recognized over the life of the grant as expenditures are incurred.

Table 1:

Donor	Amount in 000 DKK	Description of funding
International Development Research Center (IDRC)	12,782	Funding for a 2.5 year project starting June 30, 2024 titled: Enhancing actionable strategies for integrating AMR in gender/equity and climate change research.
Danish Ministry of Foreign Affairs (MFA)	10,000	In December 2024 funding was received for a 3 year project co-funded by ICARS to start January 1, 2025 titled: Team Europe Initiative Mitigating AMR in Africa.
Total	22,782	

In addition to the direct funding (Table 1), ICARS also received contributions in-kind from the partners involved in the implementation of projects and other activities of ICARS. These contributions amount to 2.7M DKK bringing the total funding from other sources to 25.5M DKK.

Our 2024 grants comprise of the following:

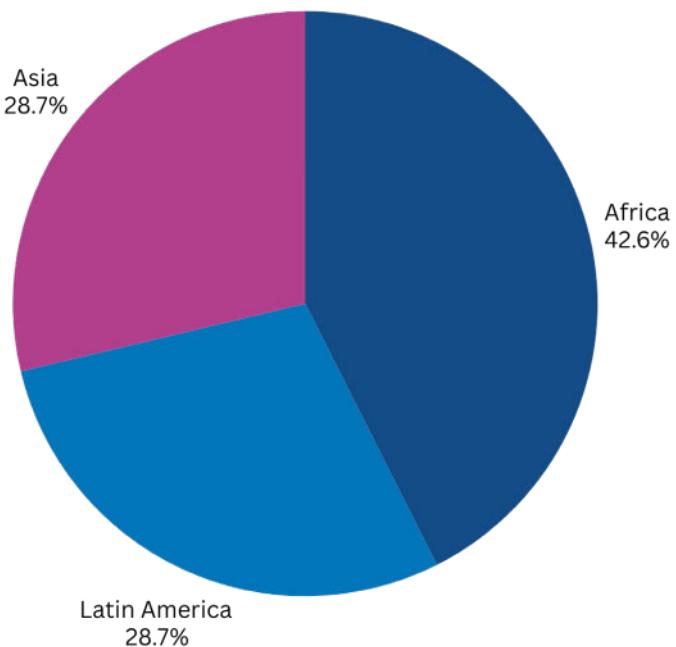
- 7 new projects were funded from the core budget in the total amount of DKK 31.1M.
- 13 new projects were funded from upstream grant budget in the total amount of 15 M DKK
- Additional funding in the amount of DKK 5M was added to the budgets of other smaller projects as well as existing projects and activities.
- Grants in the amount of DKK 444K were issued to support projects co-development in ICARS' partnering countries.

In addition to the grants issued to the research projects, provisions were increased for ICARS co-funding commitment in 2024 in connection with securing funding from DK MFA of DKK 10M for upcoming work in collaboration with the Team Europe Initiative on Health Security in Africa (in collaboration with the European Commission and EU member states) in the amount of DKK 2.5M.

Spending on co-development activities is consistent throughout the years reflecting the high demand for the AMR focused projects and the increasing role that ICARS plays in AMR intervention and implementation research.

Figure 1 shows the distribution of the 7 new projects funded from core budget between regions.

Figure 1:



ICARS' planned activities in 2025 and beyond, and risk related to them:

In 2025 ICARS will receive a grant from the Danish Ministry of Interior and Health (MOH) in the amount of DKK 53.2M, this represents a reduction by approximately 21M compared to 2024. The same level of core funding will be available in 2026. ICARS is conscious of this reality, has planned accordingly and continues to work to increase the donor base to support activities. In early 2025, ICARS secured an additional grant from DHSC in the amount of 12.8M DKK. The level of funding from the Danish government from 2027 onwards is not finalized, but the proposal has been submitted with the aim for approval in the first quarter of 2025.

Looking ahead, we are excited and committed to further advancing our engagement and projects with our partners around the world as ICARS continues to grow and evolve. While we embrace this positive outlook, we also recognise the uncertainties and risks inherent in our work. To ensure that we are aware and prepared for any potential organisational risks, ICARS follows the Organisational Risk Management Policy and monitors all financial and other risks recorded in the organisational risk register. For financial risks, special attention is given to factors such as inadequate funding for our projects and overall work, economic volatility impacting the governance of our financial resources and financial mismanagement.

In today's vibrant world, ICARS must stay attentive to global developments in terms of changing political landscapes and other global conditions. Competing and shifting priorities among national governments and funding organisations may affect the availability of funding for ICARS, potentially preventing ICARS from securing adequate funding, or causing funders to withdraw or reduce their support, subsequently hindering us to deliver on our mission. Moreover, global conflicts, wars and other crises have an impact on international collaborations, which may affect not only ICARS-supported projects, but also funding partnerships with ICARS. As a mitigating action, ICARS continuously works to diversify its funding sources, both by exploring possible funding partners in different geographical locations and other types of funding.

Furthermore, foreign exchange currency risk,

rising prices, inflation and other financial factors could potentially impede our ability to effectively manage our financial resources, including our long-term financial commitments to partners. To prevent this from happening to the best of our ability, we have robust financial management procedures in place, and we reevaluate our project commitments on a quarterly basis.

ICARS is committed to maintain a strategic and comprehensive approach to addressing financial mismanagement at our levels of our work. We recognise the potential risk that funds and resources are misused by individuals associated with ICARS or ICARS-supported projects, whether it is through deliberate actions or unintentional errors. As a lack of attentiveness or unawareness of rules can lead to accidental fraud being committed, we are dedicated to continuously raise awareness and train our staff and project partners on fraud prevention. Moreover, we are aware that our project country teams may have limited capacity for conducting financial reporting and controls, leading to the mishandling of funds and other inefficiencies within our supported projects and activities. To mitigate this, we support our project teams from the very outset of the project and throughout the project cycle. Our well-established payment and reporting structure further enables us to monitor and manage projects along the way, ensuring proper implementation and that any issues are identified as early as can be.

In addition to the above actions, ICARS' Whistleblower system records potential breaches or misconduct in the overall organisation and in projects specifically and supports the effective management of risk. ICARS' robust due diligence procedure also facilitates the identification and mitigation of risks early in projects, as this process in the beginning of the co-development stage helps assess technical strength, project management skills and the financial management capacity of partners and teams.

TABLE 2:
STATEMENT OF FINANCIAL PERFORMANCE FOR THE PERIOD ENDING 31 DECEMBER 2024

	Reference	2024		2023	
		000 DKK	000 USD*	000 DKK	000 USD
Funding Received		108,928	15,250	77,809	11,536
Funding: received from Government of Denmark (Core Funding)		74,500	10,430	71,000	10,527
Funding: received from External Donors	Note 1	22,187	3,106	1,209	179
Prior year surplus brought forward		12,241	1,714	5,600	830
Pillar 1-2 Develop and Translate Evidence		75,703	10,598	53,774	7,973
Grants - Research Projects	Note 2	49,744	6,964	27,337	4,053
Grants - Codevelopment Activities		444	62	360	53
Other Grants - Co-funding provisions	Note 3	2,505	351	10,953	1,624
Employee Salaries and Emoluments		15,238	2,133	9,926	1,472
Technical Advisory Forum		73	10	118	17
Operational Costs		7,700	1,078	5,081	753
Pillar 3. Advocate for Implementation Research as an important tool to tackle AMR		8,856	1,240	6,530	968
Grants - International Cooperation		1,054	148	481	71
Communication and participation in international events		728	102	324	48
Employee Salaries and Emoluments		4,567	639	3,266	484
Operational Costs		2,507	351	2,460	365
Pillar 4. Capacity and capability building of AMR champions in LMICs		3,880	543	2,601	386
Grants - Collaborations		994	139	762	113
Employee Salaries and Emoluments		2,028	284	1,246	185
Operational Costs		858	120	593	88
Pillar 5. Governance and administration		6,329	886	5,370	796
Employee Salaries and Emoluments		3,421	479	2,710	402
Supporting Services		1,619	227	1,814	269
Board of Directors		450	63	413	61
Other Operational Costs		840	118	433	64
Change in Prior Years Grant Commitment Value		165	23	-103	-15
Exchange Gain / Loss on Grant Commitments		165	23	-103	-15
TOTAL EXPENSES BEFORE FINANCIAL ITEMS		94,935	13,291	68,172	10,108
Financial Items		-4,276	-599	-2,604	-386
Interest Earned and Bank Charges	Note 4	-4,276	-599	-2,604	-386
TOTAL EXPENSES AFTER FINANCIAL ITEMS		90,659	12,692	65,568	9,722
Surplus (Transferrable to Next Period)		18,269	2,558	12,241	1,815

*DKK/USD EXCHANGE RATE OF 7.1429 WAS USED FOR THE CONVERSION PURPOSES IN 2024

TABLE 3: STATEMENT OF FINANCIAL POSITION AS OF 31 DECEMBER 2024

	Reference	2024		2023	
		000 DKK	000 USD*		
ASSETS					
Non-Current Assets		261	37	370	55
Non-Current Assets	Note 5	261	37	370	55
Current Assets		151,078	21,151	92,498	13,714
Receivables	Note 6	4,063	569	5,428	805
Other Accounts Receivable		182	25	298	44
Pre-Payments and accrued income		7	1	110	16
Cash and Cash Equivalents	Note 4	146,827	20,556	86,662	12,849
TOTAL ASSETS		151,340	21,187	92,868	13,769
LIABILITIES					
Non-Current Liabilities		63,817	8,934	52,576	7,795
Non-Current Liabilities on Grant Commitments	Note 7	58,348	8,169	45,274	6,713
Non-Current Liabilities on co-funding Provisions	Note 8	5,468	766	7,302	1,083
Current Liabilities		87,522	12,253	40,293	5,974
Current Liabilities on Grant Commitments	Note 7	46,322	6,485	31,725	4,704
Current Liabilities on co-funding Provisions	Note 8	7,989	1,119	3,651	541
Accounts Payable		2,343	328	2,886	428
Deferred Revenue	Note 9	28,316	3,964		
Employee Liabilities short-term		2,534	355	1,466	217
Other Short - term Liabilities (Accruals)		18	3	565	84
TOTAL LIABILITIES		151,340	21,187	92,868	13,769

*DKK/USD EXCHANGE RATE OF 7.1429 WAS USED FOR THE CONVERSION PURPOSES IN 2024

NOTES TO FINANCIAL STATEMENTS

NOTE 1

Funding received from external donors in 2024 is made up the following:

Account	Amount in 000 DKK
Wellcome	12,884
Novo Nordisk Foundation	3,508
IDRC	5,410
Other	385
Total	22,187

NOTE 2

Pillar 1-2 Grants - Research Projects are made up of grant commitments funded from the following donors:

Account	Amount in 000 DKK
Government of Denmark (MoH)	35,674
Wellcome	9,579
Novo Nordisk Foundation	483
IDRC	3,579
Other	429
Total	49,744



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NOTE 3

Pillar 1-2 other grants co-funded provisions is made up of ICARS core funding commitment of DKK 2.5M in connection with securing funding from DK MFA of DKK 10M for upcoming work in collaboration with the Team Europe Initiative on Health Security in Africa in collaboration with the European Commission and EU member state.

NOTE 4

Cash balance is made up of ICARS two bank accounts, one USD account and one DKK account. At the end of 2024 ICARS had a significant cash balance in the amount of about 140M DKK which is due to the fact that while we recognize the grant commitments in 2024 and earlier years, disbursement of funds will take place in the future periods. This is according to the agreement with the Danish Ministry of Health, that the grant commitments are created and recognized as an expense at the time ICARS enters into binding agreements to provide funding for specific projects even if the actual activities and payments take place in future periods. This allows ICARS to work with a multiple year perspective when developing projects. The cash reserve available at the end of 2024 will be disbursed within the next 2-4 years based on ICARS historical grant commitments. Interest earned on this balance was DKK 4.3M in 2024.

NOTE 5

Non-current assets include development projects (Knowledge Hub and Online Submission System) less accumulated depreciation.

NOTE 6

Accounts receivable related to grants from external donors reflects the net of payments that will be made to ICARS in accordance with payment schedule and milestones as set out in the respective grant agreements, any exchange rate correction through the year, and deferred revenue.

Account	Amount in 000 DKK
Wellcome	1,577
IDRC	2,241
Other	245
Total	4,063

NOTE 7

The current and non-current portions of grant commitments reflect the total amount committed to projects less any payments made against the commitment. The current portion represents payments planned in the upcoming 12 months based on the payment schedule from the grant agreements. The non-current portion is the amount remaining to be paid after the upcoming 12 months.

NOTE 8

The current and non-current portions of co-funding provisions reflect the total amount committed to co-funding projects, 3.5M DKK to activities related to the IDRC grant and 10M DKK to support activities related to the TEI project. The current portion represents expenditures planned in the upcoming 12 months based on the approved project budgets. The non-current portion is the expenditure planned after the upcoming 12 months.

NOTE 9

Deferred income reflects cash received in advance of revenue recognition because expenditure related to associated revenue has not taken place. The Government of Denmark amount reflects the unspent balance from 2024 carried over into 2025. In the prior year this amount was netted against AR, but this year there is no MoH AR so the deferred revenue is being reflected here. The MFA amount reflects payment in advance to support the TEI AMR Project. The Novo Nordisk Foundation amount reflects the no-cost extension to complete the planned project work by March 31, 2025.

Account	Amount in 000 DKK
Government of Denmark (MoH)	16,780
Danish Ministry of Foreign Affairs	10,000
Novo Nordisk Foundation	1,369
Other	167
Total	49,744

NOTE 10

ICARS has 6 month notice on its current rental contract. This is a standard rental agreement and ICARS has no plan of ending the contract so it will continue in 2025 with no changes.

TABLE 3: STATEMENT OF COMPARISON OF BUDGET WITH THE ACTUAL AMOUNTS FOR THE PERIOD ENDING 31 DECEMBER 2024 (DKK AND USD)

	Budget / Actual Spending	ICARS 2024 Budget as revised in June 2024	Salary	Operations	Grants	Total Spending
		000 DKK	000 DKK	000 DKK	000 DKK	000 DKK
Pillar 1-2. Develop and translate evidence	58,476	9,833	4,623	37,869	52,326	
ICARS research projects	43,370				35,674	35,674
ICARS co-funding commitments					2,500	2,500
Co-development processes	900			476	318	794
Develop scientific strategy, scientific coordination, project management	20,024	11,133		6,205		17,338
Technical advisory forum	200			73		73
Pillar 3. Advocate for Implementation Research as an important tool to tackle AMR	11,261	4,561	3,115	1,054	8,730	
Communicate knowledge and evidence	9,082	4,561	2,503	0		7,064
ICARS participation in international AMR events and Strategic Communication	2,179			612	1,054	1,666
Pillar 4. Capacity and capability building of AMR champions in LMICs	4,015	2,028	843	994	3,865	
Capacity and capability building of AMR champions	3,515	2,028	843			2,871
Capacity Building in ICARS Partner countries	500				994	994
Pillar 5. Governance and administration	6,630	3,398	1,359	0	4,757	
Supporting Services	1,784	0	455	0		455
Board of Directors	674	0	450	0		450
Administration and supporting services to governing bodies	4,172	3,398	454	0		3,852
Foreign Exchange Gain / Loss on Prior Year Grant Commitments	0	0	0	165	165	
Exchange Gain / Loss on Grant Commitments				165		165
Interest Earned	0	0	-4,276	0	-4,276	
Bank charges/ Interest earned			-4,276			-4,276
Grand Total	86,400	21,120	7,795	40,705	69,620	
% of Total	30%	11%	58%	100%		

*DKK/USD Exchange Rate of 7.1429 was used for the conversion purposes in 2024

ICARS 2024 Budget as revised in June 2024	Salary*	Operations*	Grants*	Total Spending*	% of Budget Spending
000 USD	000 USD	000 USD	000 USD	000 USD	
8,670	1,458	685	5,615	7,758	89%
6,072	0	0	4,994	4,994	
0	0	0	350	350	
126	0	67	45	111	
2,803	1,559	869	0	2,427	
28	0	10	0	10	
1,577	639	436	148	1,222	78%
1,271	639	350	0	989	
305	0	86	148	233	
562	284	118	139	541	96%
492	284	118	0	402	
70	0	0	139	139	
928	476	190	0	666	72%
250	0	64	0	64	
94	0	63	0	63	
584	476	64	0	539	
0	0	0	23	23	
0	0	0	23	23	
0	0	-599	0	-599	
0	0	-599	0	-599	
12,096	2,957	1,091	5,699	9,747	81%
30%	11%	58%	100%		

ANNEX I - INDEPENDENT AUDITORS REPORT - BDO

To the Board of Directors of the International Centre for Antimicrobial Resistance Solutions (ICARS)

**This is an English translation of the Danish Independent Auditor's report. The Danish language version shall prevail on any question of interpretation or otherwise.*

Opinion

We have audited the financial statements of ICARS for the financial year 1 January to 31 December 2024 which include the accounting practices applied (p. 34), profit and loss account (p. 37, Table 2: Statement of Financial Performance), balance (p. 38, Table 3: Statement of Financial Position) and notes (pp 38-39). The financial statements are prepared on the basis of the Danish Act on State Accounting etc., Executive Order no. 116 of 19 February 2018 on State Accounting etc. and the Ministry of Finance's Financial Administrative Guidelines, hereinafter collectively referred to as the state's accounting rules, and the accounting policies described in the financial statements.

In our opinion, the financial statements are, in all material respects, prepared in accordance with State accounting rules and the accounting practices applied in the financial statements.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing and the additional requirements applicable in Denmark as well as the provisions of "Agreement on internal audit of International Centre for Antimicrobial Resistance Solutions, ICARS in accordance with section 9(2) of the Danish Auditor General Act". Our responsibilities under these standards and requirements are described in more detail in the 'Auditor's responsibilities for the audit of the annual financial statements' section of the audit report. We are independent of the institution in accordance with the International Ethics Standards Board for Accountants' International Code of Ethics for Accountants (IESBA Code) and the additional ethical requirements applicable in Denmark, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the IESBA Code. We believe that the audit evidence obtained is sufficient and appropriate to provide a basis for our opinion.

Highlighting of matters relating to the audit

We draw attention to the fact that budget figures/amounts in USD have been included as comparative figures in the profit and loss account and notes. These budget figures/USD amounts have not been audited, as the accounts show, and we therefore do not express any assurance with regard to them.

Management's responsibility for the financial statements

The management is responsible for preparing annual financial statements that are reliable in all material respects, i.e. prepared in accordance with the State's accounting rules and the accounting practices applied in the financial statements. The management is also responsible for such internal control as it deems necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the annual financial statements, the management is responsible for assessing the institution's ability to continue as a going concern, disclosing, where applicable, matters related to going concern and preparing the financial statements on a going concern basis, except where the management either intends to liquidate the institution, to cease operations, or has no realistic alternative but to do so.

Auditor's responsibility for the audit of the financial statements

Our goal is to gain a high level of assurance that the financial statements as a whole are free from material misstatements, regardless of whether these are due to fraud or error, and to submit an audit report with an opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with International Standards on Auditing and the additional requirements applicable in Denmark and the provisions of "Agreement on Internal Audit of the International Centre for Antimicrobial Resistance Solutions, ICARS in accordance with section 9(2) of the Auditor General Act" will always detect a material misstatement when it exists. Misstatements can occur due to either fraud or errors and can be considered material if it could be reasonably expected that individually or in aggregate they would have an impact on the financial decisions that the users of the financial statements make based on those statements.

As part of an audit conducted in accordance with International Standards on Auditing and additional requirements applicable in Denmark and the provisions of the "Agreement on internal audit of the International Centre for Antimicrobial Resistance Solutions, ICARS in accordance with section 9(2) of the Danish Auditor General Act", we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risk of material misstatements in the financial statements regardless of whether these are due to fraud or error, and we structure and carry out audit actions in response to these risks and procure audit evidence that is sufficient and appropriate to form the basis for our opinion. The risk of not discovering material misstatements caused by fraud is higher than it is for material misstatements due to errors, as fraud may involve conspiracies, document forgery, intentional omissions, misdirection or the overriding of internal controls.
- Gain an understanding of the internal controls relevant to the audit in order to prepare audit actions that are appropriate to the circumstances, but we do not use this understanding to express an opinion on the effectiveness of ICARS' internal controls.
- Examine whether the accounting practices that are used by the management are appropriate and if the accounting-related estimates and associated information prepared by the management are reasonable.
- Form an opinion on whether the management's preparation of the financial statements on the basis of the going concern accounting principle is appropriate and whether on the basis of the gained audit evidence there is significant uncertainty associated with events or circumstances that can create reasonable doubt about the institution's ability to continue operations. If we decide that there are significant uncertainties, then in our audit report we must point to such uncertainties in the financial statements or if such information is insufficient, we must modify our opinion. Our opinions are based on the audit evidence that has been collected up until the date of our audit report. Future events or circumstances may, however, result in the institution no longer being able to continue operations.

We communicate with the management about things such as the planned scope and time of the audit and significant accounting-related observations, including observations about material deficiencies in internal control that we identify during the audit.

Opinion on management's review

The management is responsible for the management's review.

Our opinion on the financial statements does not cover the management's review, and we express no form of assurance when it comes to our opinion on it.

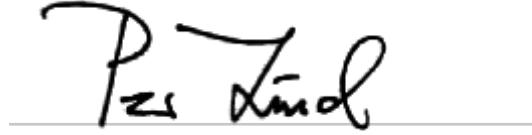
In connection with our audit of the financial statements, it is our responsibility to read the management's review and in that context consider whether it is significantly inconsistent with the financial statements or the knowledge we have gained during the audit or if it otherwise seems to contain material misstatements.

Our responsibility is also to consider whether the management's review contains the information required pursuant to the State accounting rules.

Based on the work performed, it is our opinion that the management's review is in conformity with the financial statements and has been prepared in compliance with the accounting rules of the State and the accounting practices applied in the financial statements. We have not found any material misstatement in the management's review.

Roskilde, 1 May 2025

BDO Statsautoriseret revisionsaktieselskab
CVR no. 20 22 26 70



Per Lund
Certified Accountant



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