

Action Accelerator Vehicle for the African Region (AAV-Afro)

Biosafety and Biosecurity Innovation and Leadership Programming



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AAV-Afro is an innovation and leadership initiative that helps cultivate biosafety and biosecurity innovation and leadership by equipping technical experts with critical innovation, design, and communication skills that enable them to successfully address complex health security challenges while implementing and scaling these solutions through local and regional multisectoral collaborations.

Background

AAV-Afro is a collaborative effort spearheaded by South Africa's National Institute for Communicable Diseases (NICD) and the Geneva-based Global Health Security Fund (GHS Fund). Launched in 2023, AAV-Afro is supported by key regional and international partners including the African Society for Laboratory Medicine (ASLM) and Africa Centres for Disease Control and Prevention (Africa CDC).

Participants in AAV-Afro are designated African Region Subject Matter Experts (Af-SMEs) in Biosafety and Biosecurity by the Africa CDC via its Regional Center of Excellence in Biosafety and Biosecurity (RCoEBB) program. The 2023 initial cohort

of AAV-Afro participants included the first group of Af-SMEs designated by the RCoEBB for the Africa CDC's Southern Regional Collaborating Center (SRCC) hosted by NICD in Johannesburg, South Africa.

The program's emphasis on communication and collaboration, particularly at a regional level, is critical for effective biological risk management and encourages regional collaborations for controlling transnational biosecurity threats. The initiative's practical solutions-focused approach encourages participants to identify and address specific challenges within their expert field thereby promoting tangible improvements to biosafety and biosecurity capacity. Empowering participants to extend their roles beyond conventional biosafety functions marks an innovative step towards integrating public health and policy while fostering holistic leadership in the field.

This program directly supports the Africa CDC Biosafety and Biosecurity Initiative in strengthening the biosafety and biosecurity systems of African Union member states to comply with international regulations including the International Health Regulations (IHR 2005), Biological and Toxin Weapons Convention (BWC), United Nations Security Council Resolution 1540, and the Global Health Security Agenda action packages.

About the initiative in key figures:

Part 1

10

African regional subject matter experts trained in biosafety and biosecurity innovation

7

countries represented

5

training sessions

Goals

- Cultivate the next generation of Innovation Leaders in Global Health Security in the African region
- Strengthen local capacity to create and scale innovative solutions to biosafety and biosecurity challenges
- Connect biosafety and biosecurity technical experts with the broader health security community



Objectives

- Ensure Future Leaders in Global Health Security have the necessary skills and insights to address existing, emerging and complex health security challenges.
- Equip participants with critical analytical, communication, innovation and design thinking skills, to enhance the provision of Health Security within the African Region
- Expose participants to the innovation community, including the GHS Fund's Innovation Ecosystems
- Enhance proficiency and understanding of the intricacies and complexities of the Global Health Security landscape
- Demonstrate and promote the need for collaborative partnerships across diverse actors, including the private sector, security sector, academia, philanthropic organizations, international organizations, and policymakers
- Facilitate the advancement of the skillsets and networks required to pursue leadership and senior management roles and career advancement
- Cultivate a health security Community of Practice to share solutions and foster regional collaborations

Methods

- Identify and articulate biosafety and biosecurity challenges experienced by experts in their professional settings
- Leverage collective expertise and design thinking skills to develop viable solutions to these challenges
- Effectively communicate the importance of these solutions to policy makers, funders and the broader biosafety and biosecurity community
- Identify and manage the resources needed to develop and scale these solutions
- Become active participants in the health security innovation ecosystem

Program and Structure

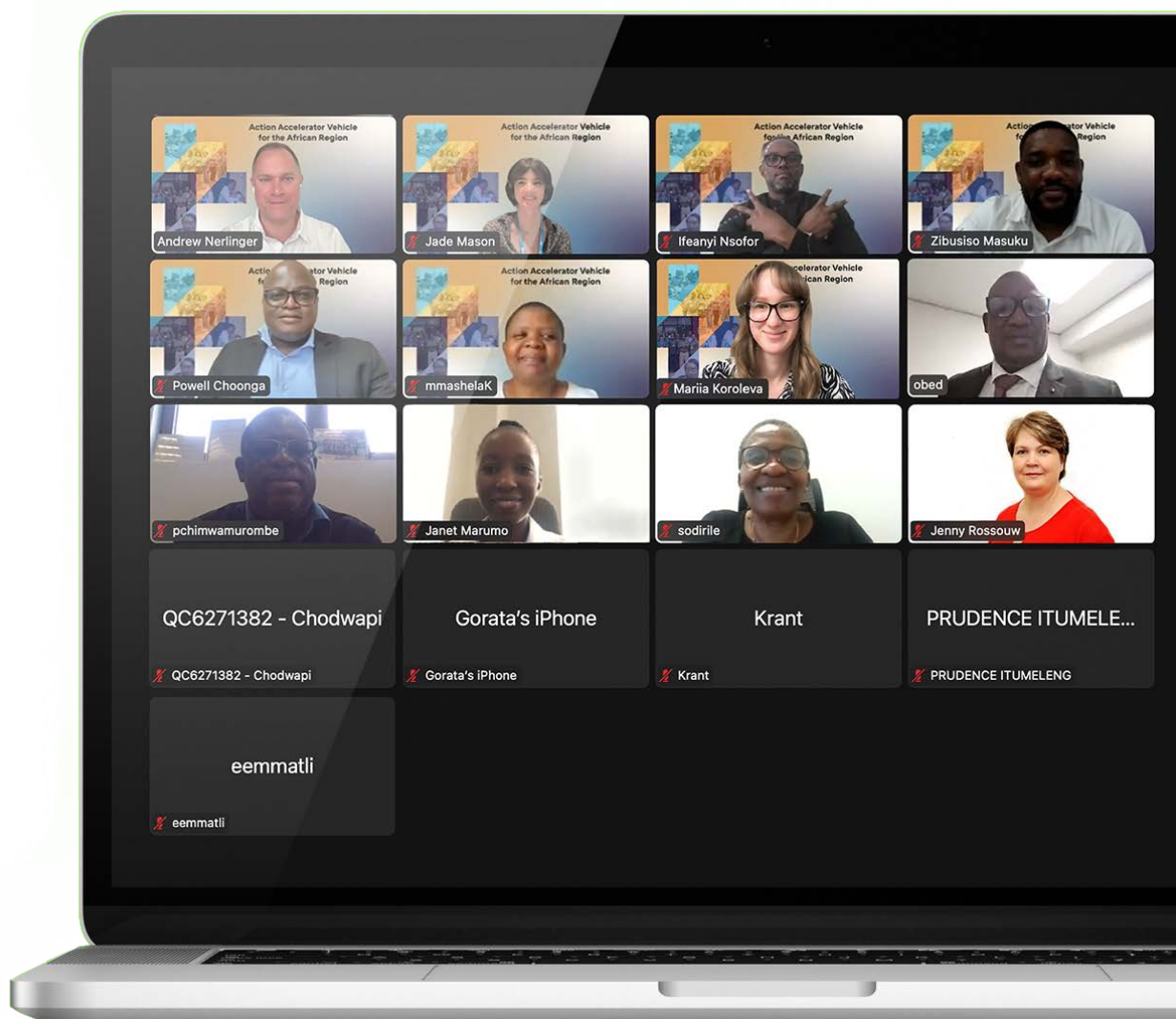
AAV-Afro participants complete a curated yearlong executive leadership program that combines traditional advanced biosafety and biosecurity training with non-traditional training in innovation, communications, and human-centered design. Participants in each cohort work together to identify specific challenges they face in their own professional settings, jointly develop intervention plans, and deliver high-impact solutions during their AAV-Afro experience. The value and expertise provided to the GHS Fund is in exposing the cohort to principles of innovation, design-thinking and communication that will help them identify and articulate challenges/problems and propose innovative solutions.

Training methods include:

- E-learning - to enhance the learning experience and interactions between fellows
- Peer-to-peer review - for skills, knowledge transfer, and capacity building, including peer facility visits
- Development of case studies

Workshops:

- Risk Communication and Public Speaking
- Human-Centered Design Workshop



Activity Summary

February 3-4, 2023: In-person kick-off at NICD in Johannesburg, South Africa

August 24, 2023: In-person cohort dinner alongside biosafety training program in Johannesburg

November 2, 2023: Virtual Communications Workshop, presented by Ifeanyi Nsofor

December 12-15, 2023: In-person Design Thinking Workshop held alongside the African Society for Laboratory Medicine Conference in Cape Town, South Africa

March 26, 2024: Final pitch session (virtual) and implementation preparation; cohort conclusion

Outcomes

The 2023 initial AAV-Afro cohort developed and presented proposed solutions for future development addressing the following topics:

- Zimbabwe: Creating a national biosafety and biosecurity strategic plan
- Zambia: Professional development strategies for biosafety and biosecurity professionals
- Botswana: Opportunities for biosafety expert engagement with policymakers

Participants who complete the AAV-Afro program gain access to resources to further design and to implement their proposed solutions while also continuing to build on the skills acquired during the program.

About the initiative in key figures:

Part 2

25+

hours of programming

7

participants sponsored
to attend ASLM 2023 in Cape
Town

in grant funding provided
by the GHS Fund
for program launch

\$70,000

About the Organizers

National Institute for Communicable Diseases

Johannesburg, South Africa

South Africa's National Institute for Communicable Diseases (NICD) is a national public health institute serving South African healthcare workers, policy makers and the general public by providing science-based, up-to-date information and articles related to communicable diseases, within the context of disease prevention on the African continent. NICD is the host institution of the inaugural Africa Centres for Disease Control and Prevention (Africa CDC) Regional Center of Excellence in Biosafety and Biosecurity (RCoEBB) serving countries within the Africa CDC Southern Regional Collaborating Center.

Global Health Security Fund

Geneva, Switzerland

The Global Health Security Fund (GHS Fund) is a Geneva-based nonprofit that supports impact investment in global health security innovation with a focus on the Global South. The GHS Fund bridges the gap between the health security and innovation communities and provides a community of practice for identifying, implementing, and scaling equitable and financially sustainable solutions to our most pressing health security challenges.

Program Leads

Program Lead: Zibusiso Masuku; NICD, South Africa

Administration: Nomsebenzi Malinga; NICD, South Africa

Cohort Participants

- Christopher Brandt, South Africa
- Percy Chimwamurombe, Namibia
- Powell Choonga, Zambia
- Sindisiwe Susan Dlamini, Eswatini
- Kgole Mmalehlogonolo Mmashela, South Africa
- Obed Motsomi, Botswana
- Vimbai G. Mukondiwa, Zimbabwe
- Rumbidzai Ndungwani, Zimbabwe
- Jennifer Rossouw, South Africa
- Ts'aletseng Siimane, Lesotho
- Anastasia Trataris-Rebisz, South Africa

Program Faculty

Zibusiso Masuku, South Africa (Biosafety and Biosecurity)

Ifeanyi Nsofor, Nigeria (Communications)

Lisa McDonald, Switzerland (Innovation)

Andrew Nerlinger, Switzerland (Design Thinking)

Jade Mason, Switzerland (Design Thinking)

AAV-Afro Design Thinking Workshop

Participant Preparation

This preparation pack is designed to serve two fundamental roles in preparation for the AAV-Afro Design Thinking Workshop. First, it aims to outline the workshop's overall aims, objectives, and goals. Second, the pack provides a structured and comprehensive guide to prepare for the workshop effectively. This includes an introduction to the principles of Design Thinking and a detailed methodology for identifying challenges in your field and articulating coherent problem statements.

Your ability to articulate challenges is crucial, as it directly fulfills the workshop's aims, objectives, and desired outcomes. We aim to enhance your full participation and engagement in the workshop by equipping you with the necessary tools and guidance. This approach ensures that you are well-prepared, enabling you to derive the maximum benefit from this collaborative experience and contribute meaningfully to our shared goals.

Goals

The AAV-Afro Design Thinking Workshop aims to leverage the cohort participants' practical expertise and expert technical knowledge to ideate innovative, actionable solutions that address real-world professional challenges biosafety and biosecurity professionals face on a daily basis.

Objectives

Articulate clearly defined challenges that participants experience as biosafety and biosecurity experts in their own professional settings; these presentations of challenges will lay the groundwork for the ideation process

Facilitate a collaborative environment to harness participants' collective expertise in biosafety and biosecurity to engage in creative ideation to conceptualize potential solutions

Lay the groundwork for developing actionable solutions suitable for receiving support for further development following the workshop



Pre-Workshop Preparation

Challenge Identification and Definition

Personal Insights: Participants will be encouraged to use design thinking to identify specific challenges and needs in biosafety in their professional settings, focusing on significant yet addressable issues. Participants can identify challenges and needs by looking at what workarounds exist in their professional settings and asking, “How might we?” “What if?” and “What is the future of?”.

Data Accumulation: To ground their observations in empirical evidence, participants will be encouraged to compile relevant data (e.g., photos), case studies, or research that underscores the identified challenges and ground their observations in empirical evidence.

Articulating Challenge Statements: Participants will craft clear and concise challenge/need statements outlining the problems and their impacts to be presented at the workshop.

Workshop Activities

Collaborative Problem-Solving Process

Challenge Presentation and Grouping: The workshop will begin with participants sharing their challenge statements – challenges will then be grouped based on broader themes for a more focused discussion.

Creative Ideation: Utilizing the “How Might We” approach, the workshop will facilitate brainstorming sessions to generate creative solutions to challenges.

Prioritization of Solutions: Workshop facilitators, experts, and the AVV–Afro cohort will identify 1-2 solutions to focus on and fine tune.

Post-Workshop Follow-Up

Solution Development: Ideas with the most potential will be taken forward into the prototyping phase, where basic models or outlines of the solutions will be developed.

Iterative Feedback: These prototypes will be presented for group feedback, enabling iterative refinement and enhancement of the ideas.

Pathway to Seed Funding

Project Refinement: Post-workshop, participants will continue to refine their project proposals, incorporating workshop feedback and additional insights.

Ongoing Mentorship: To ensure the success and alignment of the proposals, continuous mentorship and support will be offered to the participants.

Pitching for Funding: Assistance will be provided in preparing compelling pitches for the projects, focusing on their feasibility, impact, and alignment with biosafety and biosecurity advancements.

Pre-Workshop Introduction to Design Thinking

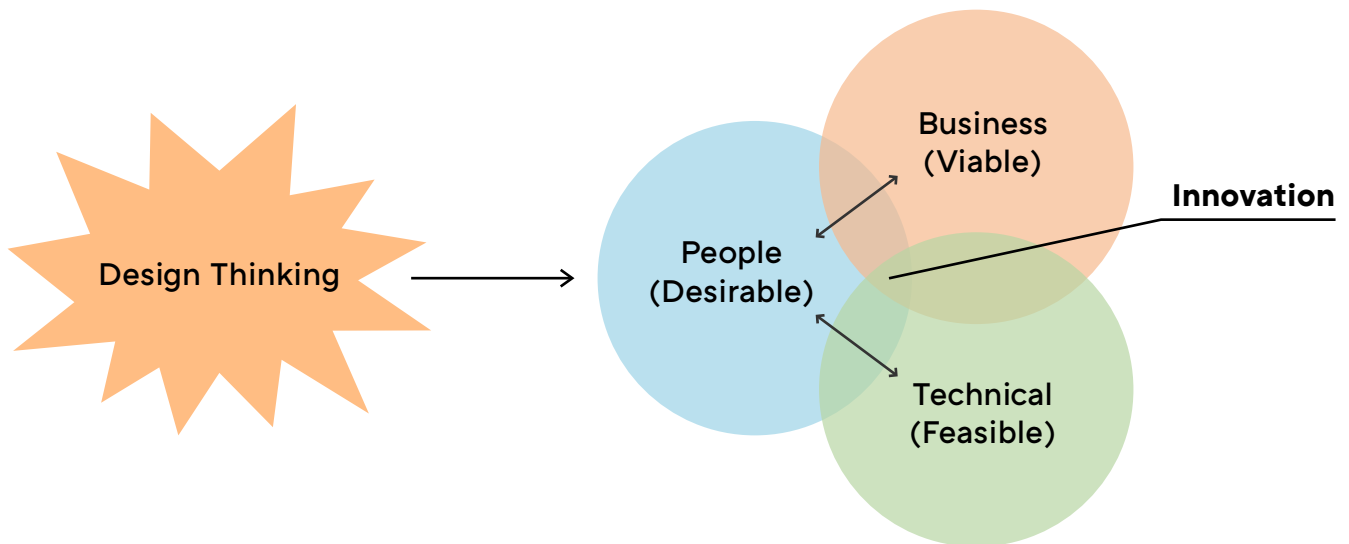
Design thinking is a human-centred approach to innovation. Successful innovations require integrating the needs of people (what is desirable), the possibilities of technology (what is feasible), and the requirements of business (what is viable). Design Thinking helps achieve that balance by finding the sweet spot of feasibility, viability, and desirability while considering people's real needs and desires.

For an extensive introduction please be sure to watch the following videos:

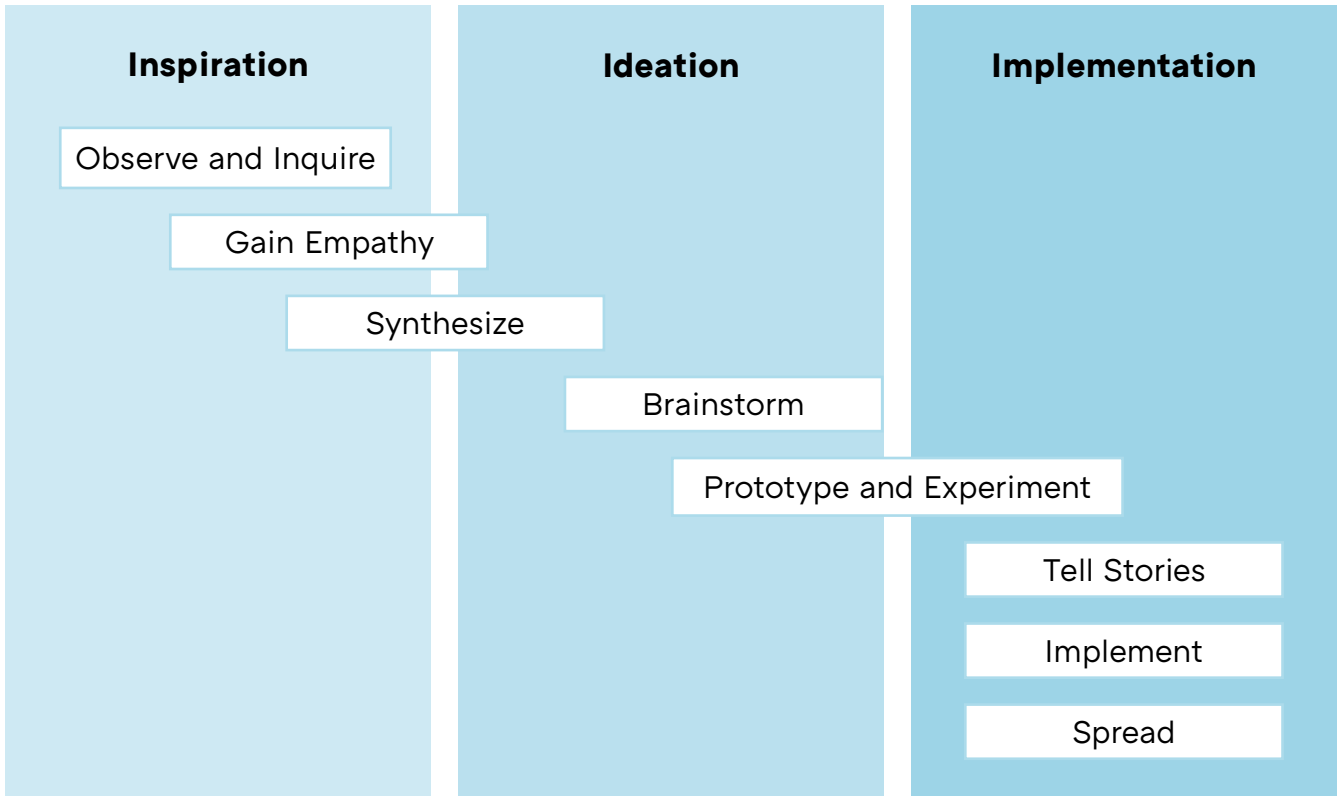
Previous Design Thinking Workshops

TL; DR: <https://vimeo.com/showcase/9440806/video/688102199>

Keynote: <https://vimeo.com/showcase/9440806/video/687771788>



Design Thinking Process



Identifying Challenges

Reflect on Your Biosafety Experience

Consider your personal experiences in biosafety. Reflect on instances where you've encountered challenges, inefficiencies, or process gaps.

Think about specific incidents or ongoing issues that have impacted your work or the wider field.

Where possible, initiate conversations with your colleagues; these discussions can offer diverse perspectives and highlight issues you may not have previously considered.

Crafting Problem Statements

Problem statements should accurately capture the essence of the challenge and be specific, human-centered, and solution-neutral.

A well-defined problem statement is the foundation for effective ideation and solution development.

Utilise the "How Might We" Format

The "How Might We" (HMW) question format is an approach that is instrumental in transforming problems into opportunities for creative design and innovation.

For example, instead of stating, "Lab safety protocols are outdated," reframe it as, "How might we update lab safety protocols to reduce contamination risks?" This format opens up possibilities for solution-oriented thinking.

Examples of Well-Defined Problem Statements

- How might we help patients better manage their blood glucose levels with a connected device?
- How might we improve the experience of young patients with schizophrenia?
- How might we empower young women to learn about birth control in X geographical location/setting?
- How might we make the effort to stay on multiple medications easier over time?
- How might we prevent and prepare the world for pandemic threats through early warning surveillance by incorporating human, animal and environmental health markers?
- How might we make green spaces accessible to low-income populations?
- How might we balance human, environmental, and economic health in pursuing X geographical location 's infostructure development?
- How might we incentivise the development of new technologies applied to biological research to ensure planetary health?
- How might we encourage paediatricians to mobilise families to protect children by taking climate action?
- How might we accelerate the drug development process to reduce time-to-market, while ensuring the safety and efficacy of new drugs?
- How might we improve the accuracy and accessibility of diagnostic tools to reduce misdiagnoses, particularly in critical areas like oncology and infectious diseases?
- How might we foster the development of new antibiotics to effectively combat the growing challenge of multi-drug-resistant bacterial infections?
- How might we streamline supply chain processes in the biotech industry to ensure the efficient and reliable distribution of essential products?



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