

Biorisk Management Practices and Training Needs in East Africa

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Study Design and Rationale

- East African biorisk management (BRM) trainers and trainees were surveyed about their laboratory practices post-BRM training and their perceived future BRM training needs.
- All those surveyed had been trained within the past 5 years by members of the Sandia National Laboratories' International Biological and Chemical Threat Reduction group (SNL/IBCTR).
- The survey was designed to:
 - Provide a baseline of BRM practices that can serve as a benchmark for performance monitoring and to identify priorities for future BRM training.
 - Measure the impact of developing regional BRM trainers in East Africa.

Demographics of Survey Respondents

Table 1: Self-identified Country and Sector of Survey Respondents

	Kenya	Uganda	Other Countries ¹	All
Animal Health	39.71% (27)	18.92% (14)	6.67% (1)	26.75% (42)
Public Health	42.65% (29)	50.00% (37)	13.33% (2)	43.31% (68)
Higher Education	1.47% (1)	8.11% (6)	53.33% (8)	9.55% (15)
Science and Technology	2.94% (2)	1.35% (1)	0.00% (0)	1.91% (3)
Ministry	8.82% (2)	14.86% (11)	26.67% (4)	13.38% (21)
Other	4.41% (3)	6.76% (5)	0.00% (0)	5.10% (8)
All	43.31% (68)	47.13% (74)	9.56% (15)	100% (157)

¹Other Countries represented include the Democratic Republic of Congo (4), Ethiopia (4), Rwanda (3), Tanzania (3), and Cameroon (1). Data are expressed as percentage (and actual number) of total responding.

Evidence of Institutional BRM System

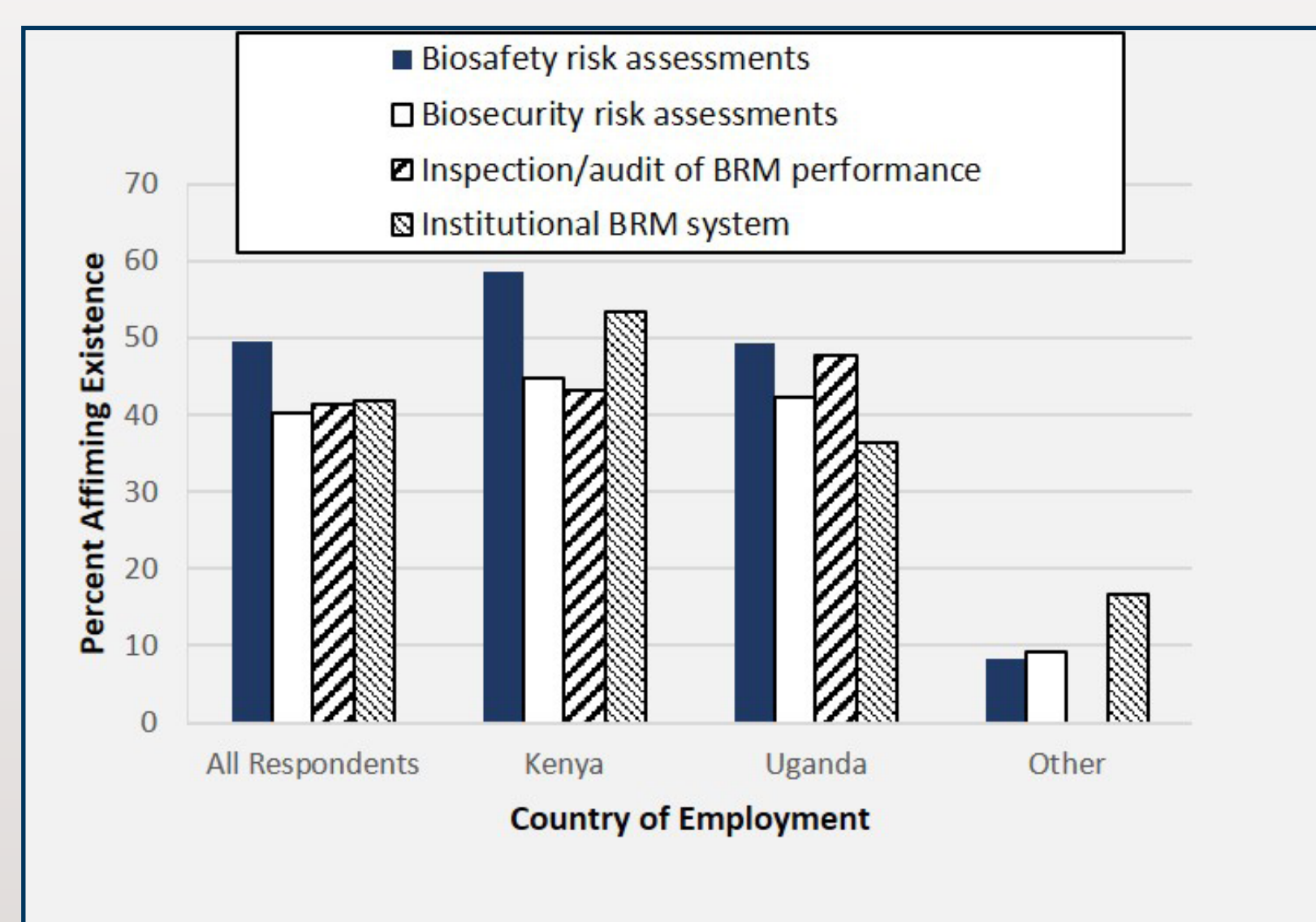


Figure 1: Percentage of respondents affirming that the specific BRM system indicators listed were in place in their institution. All respondents (n=133 - 136) include those working in all countries surveyed. Those working in Kenya (n=58), Uganda (n=63 - 66) or Other (Cameroon, DRC, Ethiopia, Rwanda and Tanzania, n=11 - 12) are shown separately.

Frequency Adhering to Biosafety Practices

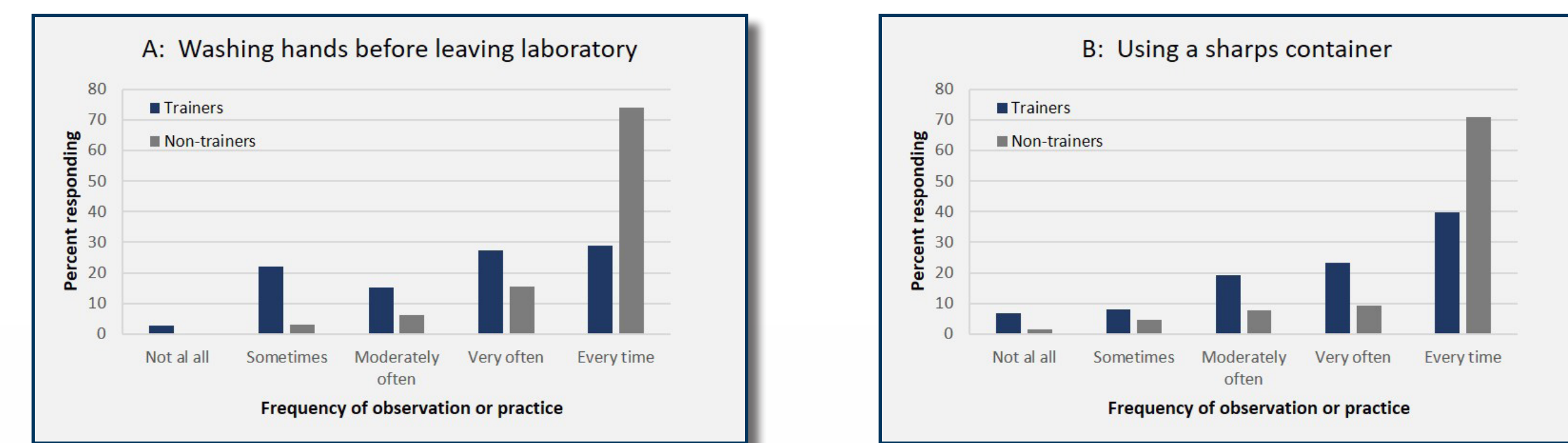


Figure 2: Trainers and non-trainers reported on the frequency that they observed others adhering to or adhered to, respectively, the biosafety practice specified.

Frequency Adhering to Biosecurity Practices

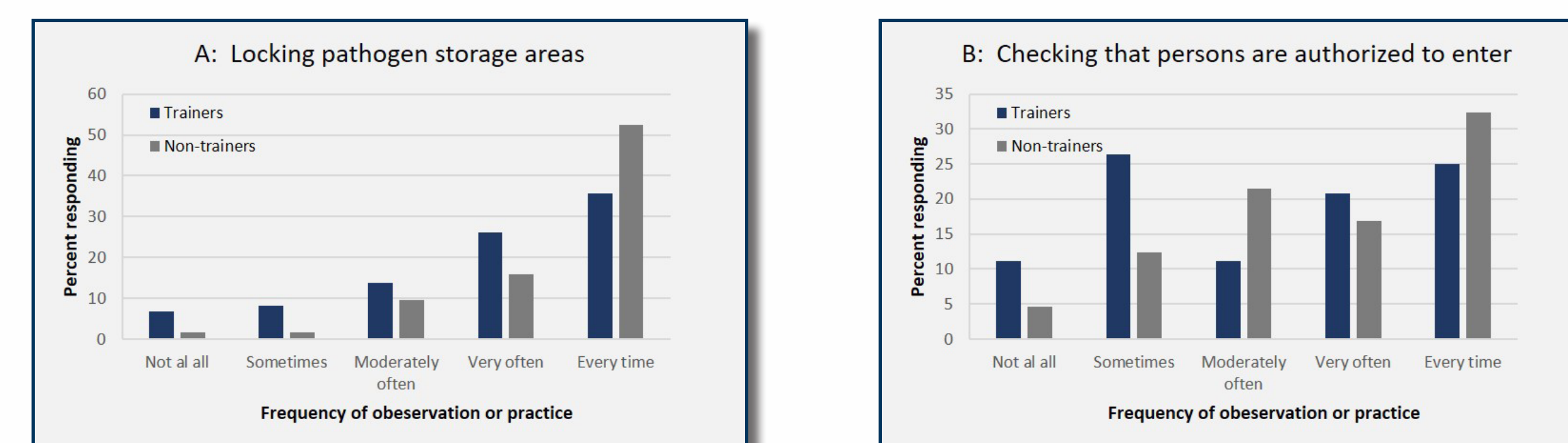


Figure 3: Trainers and non-trainers reported on the frequency that they observed others adhering to or adhered to, respectively, the biosecurity practice specified.

Regional BRM Trainer Impact

Table 2: BRM Training Metrics in 1-year Period

	Minimum # Reported	Maximum # Reported	Sum	Mean
BRM Trainings Delivered	1	22	138	3.73
Participants Trained	2	500	1,538	95.62

Trainings reported were delivered by 37 BRM trainers.

Table 3: Use of BRM Curricula

Instructional Resource	Number of Respondents	Percent
Global Biorisk Management Curriculum (GBRMC/SNL)	28	65%
Biorisk Management Laboratory Biosecurity Guidance (WHO)	17	40%
World Animal Organisation (OIE)	7	16%
Biosafety in Microbiological and Biomedical Laboratories (BMBL/CDC)	6	14%
Other	6	14%

43 trainers responded and could check more than one answer.

Biorisk Management Training Needs

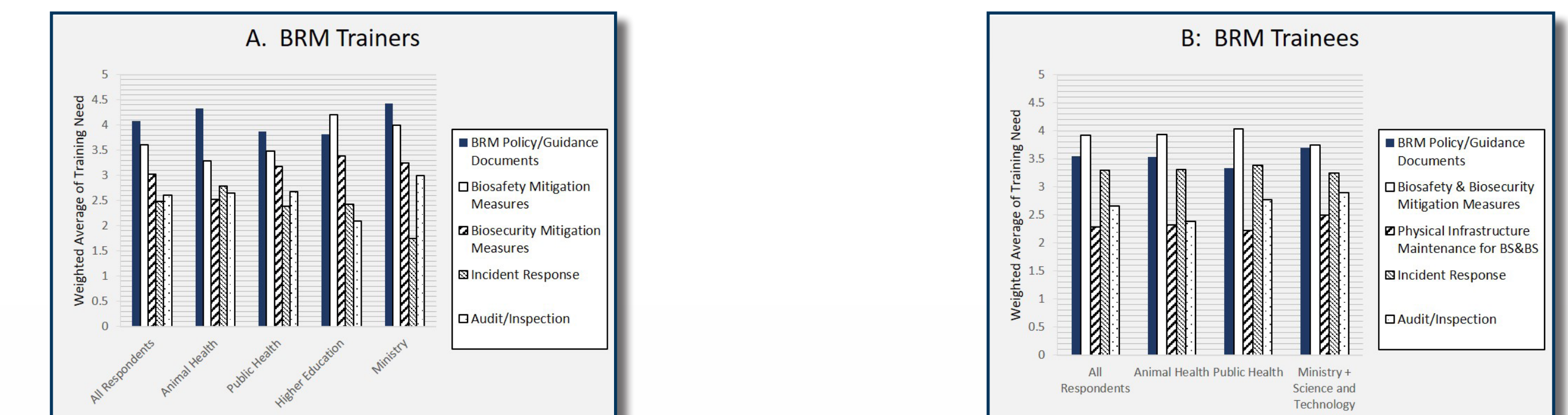


Figure 4: Trainers (A) and trainees (B) ranked the indicated BRM training needs (see legend) from highest need (5) to lowest need (1) for their institute. A weighted average was calculated based on the percentage of respondents ranking each training topic from lowest - highest need (1 - 5). Data are shown both without (All Respondents) and with stratification by self-identified sector.

Biorisk Management Support Desired

Table 4: BRM support of Highest Benefit as Identified by Trainers and Trainees

Support type	BRM Trainers		BRM Trainees	
	Weighted Average (scale of 1 - 4)	Number of respondents	Weighted Average (scale of 1 - 6)	Number of respondents
Coaching from or co-training with an expert trainer	3.09	54		
Coaching and mentoring from BRM experts			4.74	57
Guidance in conducting training needs assessment and curriculum development	2.73	52	4.43	58
Institutional management support and authorization to train	2.51	63		
Institutional requirement for biorisk management			3.88	58
National requirement for biorisk management			3.42	62
Certification as a biorisk management trainer	2.40	67		
Certification as a biorisk management practitioner			3.18	60
Networking with others with similar biorisk management needs			2.58	65

Conclusions

- Less than 50% of East African respondents indicated that their institute had evidence of a BRM system in place.
- 37 BRM trainers reported training 1538 trainees in the previous one year period.
- BRM trainers ranked institutional training on BRM Policy/Guidance Documents as their highest training need, whereas BRM trainees identified training on Biosafety and Biosecurity mitigation measures as their highest need.
- Coaching and mentoring from BRM experts was identified as the highest benefit to enable the success of both trainers and trainees.