
Annual Report 2023

Research Capacity Strengthening

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List of abbreviations

ADP	Access and Delivery Partnership
AFR	WHO African Region
AFRO	WHO Regional Office for Africa
AMR	WHO Region of the Americas
AMRO	WHO Regional Office for the Americas
AUB	American University of Beirut
CCMS	Luxembourg Institute of Health Competence Center for Methodology and Statistics
CIDEIM	Centro Internacional de Entrenamiento e Investigaciones Médicas
CRDF	Clinical Research and Development Fellowship
CRL	Clinical Research Leadership programme
DCVMN	Developing Countries Vaccine Manufacturers Network
DNDi	Drugs for Neglected Diseases <i>initiative</i>
EMR	WHO Eastern Mediterranean Region
EMRO	WHO Regional Office for the Eastern Mediterranean
ER	expected result
EUR	WHO European Region
EURO	WHO Regional Office for Europe
EVI	European Vaccine Initiative, Germany
FIND	Foundation for Innovative New Diagnostics
Gates Foundation	Bill & Melinda Gates Foundation
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GMU	Gadjah Mada University
GPW13	WHO 13th General Programme of Work
HIV	Human immunodeficiency virus
HRP	UNDP/UNFPA/UNICEF/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction
HTM	HIV/AIDS, Tuberculosis, Malaria and Neglected Tropical Diseases cluster
IAVI	International AIDS Vaccine Initiative
IDDO	Infectious Diseases Data Observatory, Centre for Tropical Medicine and Global Health, Oxford, United Kingdom
IDRC	International Development Research Centre
IIHMR	Indian Institute of Health Management Research
IMP	TDR Research for Implementation Unit
IR	implementation research
ISARIC	International Severe Acute and emerging Infection Consortium
ISGlobal	Barcelona Institute for Global Health, Barcelona, Spain
IVI	International Vaccine Institute, South Korea

JPGSPH	James P. Grant School of Public Health
LMIC	low- or middle-income country
MMV	Medicines for Malaria Venture
MOOC	massive open online course
MPH	Master in Public Health
MSc	Master of Science
NSPH	National School of Public Health, University of Antioquia, Medellín, Colombia
NTD	neglected tropical disease
OR	operational research
R&D	Research and development
RCS	TDR Research Capacity Strengthening Unit
RTC	regional training centre
SDGs	Sustainable Development Goals
SEAR	WHO South-East Asia Region
SEARO	WHO Regional Office for South-East Asia
SORT IT	Structured Operational Research and Training Initiative
SPH	School of Public Health, University of Ghana, Accra, Ghana
STPHI	Swiss Tropical and Public Health Institute
SWG	Scientific Working Group
TB	tuberculosis
TDR	UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases
TPO	training partner organization
UCAD	Université Cheikh Anta Diop in Dakar, Senegal
UGM	Universitas Gadjah Mada
UHC	universal health coverage
UNDP	United Nations Development Programme
USTTB	University of Sciences, Techniques and Technologies Bamako, Mali
UVRI	Ugandan Virus Research Institute
WHO	World Health Organization
WPR	WHO Western Pacific Region
WPRO	WHO Regional Office for the Western Pacific

Introduction

Research Capacity Strengthening (RCS) activities are at the heart of the UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training on Tropical Diseases (TDR) strategy 2018–2023, which aims to contribute to the achievement of the Sustainable Development Goals (SDGs) by 2030 and to support universal health coverage (UHC). The TDR vision of the health and well-being of people burdened by infectious diseases of poverty being improved through research and innovation is embedded in the overarching RCS goal to strengthen the capacity of individuals, institutions and societies to produce research evidence useful for reducing the burden of infectious diseases of poverty in low- and middle-income countries (LMICs). By strengthening this capacity, the RCS unit equips health workers with transferable core competencies and skill sets which contributes to building health system resilience, epidemic preparedness and response.

Objectives

The TDR/RCS objectives refer to the capacity to produce evidence that directly informs public health practice and policy, as well as strengthens LMIC research capacity across implementation and clinical research, specifically aiming to build research leadership for the future to:

- strengthen capacity in LMICs to conduct interdisciplinary priority research by supporting individuals, institutions and networks; and
- promote institutional and individual leadership in health research through postgraduate training grants and career development fellowships, and the development of regional training centres (RTCs).

These objectives are aligned with the TDR Strategy 2018–2023, which contributes to several SDGs, including Goal 3: *Ensure healthy lives and promote well-being for all at all ages*, and specifically:

SDG Goal 3 – Target 3.3: By 2030 end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.

The World Health Organization (WHO) has set out its interconnected strategic priorities and goals in the 13th General Programme of Work (GPW13) for 2019–2023. In alignment with these priorities and goals, the focus of TDR efforts is on strengthening the capacity of researchers in LMICs in implementation research (IR). TDR/RCS work underpins the key areas of action to achieve the WHO GPW13 “triple billion” goals:

- One billion more people benefiting from universal health coverage (UHC);
- One billion more people better protected from health emergencies; and
- One billion more people enjoying better health and well-being.

Research Capacity Strengthening Unit – Specific activity objectives

Regional training centres (RTCs):

- To enable skills development and knowledge sharing through the application of TDR's portfolio of training materials and supervision of targeted research projects across diverse communities of learners within their respective subregions; and
- To provide institutional strengthening and to foster regional networks of health researchers and empower local actors to design, plan, and carry out high-quality IR.

Massive Online Open Courses (MOOCs):

- To enhance IR capacity and promote widely accessible evidence-based practices for addressing healthcare delivery challenges related to infectious diseases of poverty; and
- To expand the repository of training materials to include regionally diverse examples and case studies of neglected tropical diseases to inform and inspire the next generation of IR practitioners.

Postgraduate Training Scheme:

- To strengthen IR capacity by providing academic scholarships for Master degree training with the aim to produce research evidence that is useful for reducing the burden of infectious diseases of poverty; and
- To work with networked partner universities and training institutions in LMICs to implement the TDR Postgraduate Training Scheme and to jointly advance master-level training in IR.

Clinical Research Leadership Programme:

- To improve clinical research skills, together with developing strong clinical research leadership skills, through customized learning, coaching and leadership experience at the host training partner organizations (TPOs) and home institutions; and
- To support gender equity through active measures to ensure fair participation of people identifying as women, men and other genders.

SORT IT projects focusing on neglected tropical diseases (NTDs) and the HIV/AIDS, Tuberculosis, Malaria and Neglected Tropical Diseases cluster (HTM) in collaboration with the TDR Research for Implementation Unit:

- To scale up national operational research capacity in LMICs;
- To conduct and publish locally-relevant operational research that will limit the emergence of disease outbreaks and reduce the burden of infectious diseases of poverty;
- To build sustainable structures and processes for evidence-informed decision-making and integrating interventions to mitigate the health impact of climate change and embracing a One Health approach wherever possible; and
- To enhance mechanisms for knowledge sharing and maximize the potential for broader health impact.

Access and Delivery Projects (ADP) focusing on IR:

- To support development, translation and roll-out of digitalized IR capacity-building resources;
- To conduct IR focusing on barriers to delivery of health technologies for control, prevention, diagnosis, treatment, and elimination of NTDs for the attainment of UHC and the SDGs.

Key achievements for the strategic priority area in 2023

- TDR RTCs counted over 4300 participants registered for eight sessions of the IR MOOC held across the year – delivered in English, French and Spanish. In addition, over 40 in-person TDR training courses were delivered within the RTC network to 1257 individuals (802 identified as women [64%]).
- New MOOC IR modules, online courses, training documents and sensitization videos were completed on: Awareness raising in IR, Chaga's disease in Ecuador, Community engagement, COVID-19 vaccination in Ghana, Ethics, Social innovation and Trachoma in Ethiopia,
- The IR online toolkit was translated to Russian.
- A guide on *How to conduct a scoping review* was finalized and made available in French, English and Mandarin, with accompanying instructional videos in French and English.
- The IR toolkit module on One Health content was developed in English.
- In the 2022-2023 biennium, two hundred and twelve new Master's students were enrolled, including 17 MPH students from across 15 French-speaking West African countries with the University of Bamako, Mali's first TDR cohort and 140 students completed their Master in Public Health (MPH) degree targeting IR.
- IR curriculum for IR-niched MPH programmes, based on the IR core competencies, was developed.
- The first cohort of 20 Clinical Research Leadership Fellows selected out of 437 eligible applicants started and 18 fellows from the Clinical Research and Development Fellowship finished their placement at the TPOs.
- Five articles were published with LMIC first authors (one woman and four men). One woman is last author on two publications.

Summary progress description for 2023

Table 1 presents summarized progress on RCS activities as set out in TDR's workplan 2022–2023. The Expected Results (ERs) by outcome, with objectives, indicators and the progress against targets, align with the TDR-approved Programme Budget and Workplan for the 2022–2023 biennium. The narrative report which follows, provides more details on these activities, presented under the respective ERs. The ERs have been achieved overall or are achieved and on track for continuation, with the exception of RTC satellite centre implementation. Budget constraints and reshaping of activities for a stronger focus on IR have limited the number of satellite institutions that have been able to provide training activities.

Table 1. Research Capacity Strengthening workplan – Overall progress**Expected Results – Research capacity strengthening**

Expected results and deliverables	Indicators and targets
2.1.1.1 TDR support to regional training centres: i) RTCs operational in the implementation of short training courses on good health research practices and IR; ii) RTCs operational in the dissemination in their region of short training courses; iii) effective coordination of the RTC initiative.	By 2023: <ul style="list-style-type: none"> • Four satellite institutions per RTC ready to implement at least two training courses in IR or Good Health Research Practices. • At least two different short training courses on IR or Good Health Research Practice implemented in each RTC. <p><i>Progress made:</i></p> <ul style="list-style-type: none"> ▪ <i>Partly achieved. 18 satellite training centres are functional, three RTCs are still identifying suitable partners within their region to act as satellite institutions.</i> ▪ <i>Achieved. Each of the seven RTCs have institutionalized at least two short courses on IR and/or good health research practice.</i>
2.1.2 Targeted research training grants in low- and middle-income countries: i) early career trainees completed their degree in their home country or within the region; ii) a global network (intra- and interregional) of TDR-supported implementation researchers developed.	By 2023, additional 60 Master's trainees enrolled or completed their degree (160 Master's trainees for the US\$ 50 million budget scenario). <p><i>Progress made:</i></p> <ul style="list-style-type: none"> ▪ <i>Achieved. In 2022-2023 biennium, 212 additional Master's trainees were enrolled in the MPH degree across the participating eight universities. 140 students graduated in 2023.</i>
2.1.4 Advanced training in clinical product development: i) highly skilled scientists in research and development (R&D) in low- and middle-income countries; ii) R&D skills gained during training implemented in the home institution; and iii) mapping training programmes which address clinical research team core competencies.	By 2023, 30 new fellows enrolled or completed their training. <p><i>Progress made:</i></p> <ul style="list-style-type: none"> ▪ <i>Achieved. Eighteen fellows from the last round of the Clinical Research and Development Fellowship completed their placement in 2023 and 20 new fellows were selected for the new phase of the scheme, the Clinical Research Leadership Programme, starting their placement in 2024.</i>
2.1.6 Structured IR capacity building – renewal of UNDP Access and Delivery Partnership (ADP): i) ADP focus countries identify and address factors that impede the effective access and delivery of health technologies; and ii) IR projects completed.	By 2023: <ul style="list-style-type: none"> • Three to five ADP focus countries incorporate IR in their disease control implementation plans • Two to three ADP focus countries conduct IR projects and findings incorporated in control programmes.

Expected Results – Research capacity strengthening

Expected results and deliverables	Indicators and targets
	<p><i>Progress made:</i></p> <p><i>Achieved.</i></p> <ul style="list-style-type: none"> <i>Ghana, Malawi and the United Republic of Tanzania have incorporated IR approaches in their disease control implementation plans.</i> <i>Ghana and the United Republic of Tanzania have conducted and published IR articles and disseminated IR findings within their programmes.</i>
<p>2.1.7 Strengthening operational research capacity in Global Fund supported programmes:</p> <p>i) programme teams trained to incorporate operational research (OR) in Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) applications; and ii) OR projects completed.</p>	<p>By 2023:</p> <ul style="list-style-type: none"> Three to four national programmes receiving GFATM support to conduct OR. Approximately 20 peer-reviewed publications and policy briefs. <p><i>Progress made:</i></p> <ul style="list-style-type: none"> <i>Partly Achieved. Zimbabwe received GFATM funds and is conducting OR using the SORT IT model. The United Republic of Tanzania incorporated OR in their current GFATM application. Côte d'Ivoire received support to identify opportunities and challenges for incorporating OR in GFATM-supported national programmes.</i> <i>Twenty-four OR manuscripts are in preparation in Guinea and Kenya.</i>

Progress description in 2023 and plans for 2024–2025

The growing demand for IR training conceptualized and implemented by LMICs has inspired TDR to develop a range of training options, from workshops and short training courses implemented by the seven RTCs, to fully accredited programmes in the TDR Postgraduate Training Scheme, developed in partnership with eight universities in LMICs. This training goes beyond academia-based researchers and includes communities, implementation programmes, decision- and policy-makers. There are five ERs which cover these objectives.

TDR will continue to innovate in training formats, applying the latest methods in face-to-face, hybrid online learning. Capacity building will continue by supporting trainings conducted in regional networks targeting health professionals, programme and policy-makers, in addition to academia. Trainings and capacity building will be tied into the new global challenges strategy and will continue to engage closely with health system programmes and communities. Further, we will focus on supporting leadership development, through clinical research fellowships and support to IR leaders in LMICs. We will also seek to apply social innovations to put the training materials we have developed with our partners into the hands of the populations we serve through community-based initiatives.

TDR/RCS will focus training and capacity strengthening in LMICs and align themes with the pillars of the 2024–2029 Strategy. This report presents the four ERs in Table 1 under the RCS activity 2.1, that is ER 2.1.1.1, ER 2.1.2, ER 2.1.4, ER 2.1.6 and ER 2.1.7.

ER 2.1.1.1: Strategic support to WHO regional activities: The regional training centres and IR training tools

TDR supports a network of RTCs through which TDR supports individual and institutional capacity strengthening. The first RTCs were selected on a competitive basis in 2009. They conduct and disseminate training courses relevant to the TDR strategy, relevant to good health practice and for those linked to IR conducted as in-person, hybrid online modalities, and with specialized target modules added to the general IR courses. Regionalization of courses using training-of-trainers methodology and training workshops enables RCS to work more closely with satellite institutions and end-users and become more relevant to regional needs, to empower RTCs as training hubs, and to utilize existing expertise in disease-endemic countries. The seven RTCs supported by TDR are represented in Fig. 1 below (one per WHO region, including an anglophone and a francophone RTC in the African region).

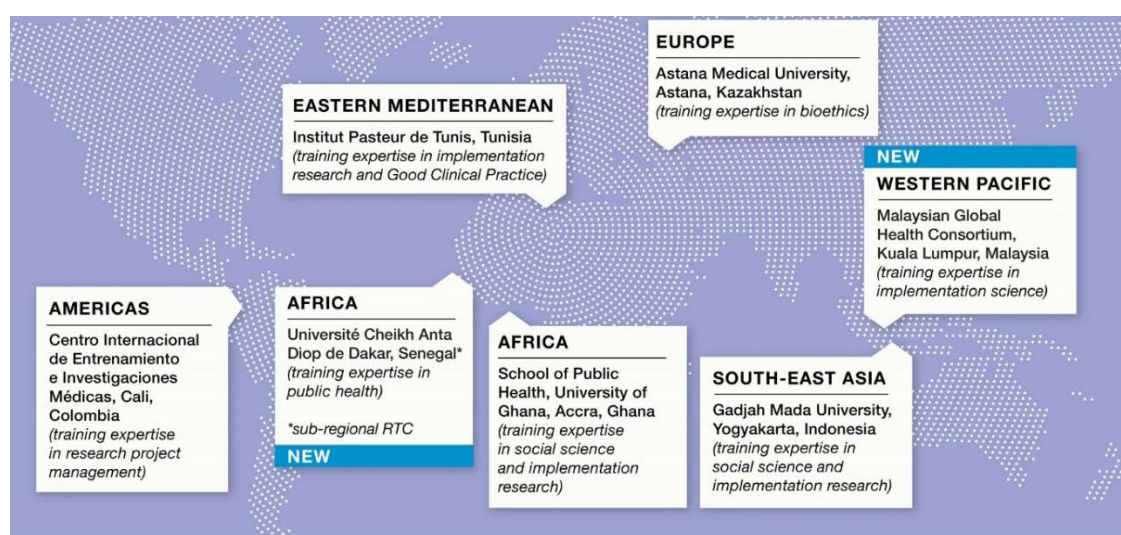


Figure 1. TDR Regional training centres

All seven RTCs offer at least two trainings, either on IR or good health research practice on an annual basis. During 2023, the RTCs offered a mix of in-person and hybrid online and in-person courses. With students coming from satellite institutions in the respective regions for in-person training with the RTC, 113 individuals participated in the effective project management and evaluation course, 178 in good health research practice, 72 in ethics in IR, 220 in good clinical practices, 468 in principles of IR/Introduction to IR, 25 in research project management, 136 in good laboratory practice, and 136 in a combined course on good clinical practice and good clinical laboratory practice. Of the 1,257 trained individuals, 802 identified as women (64%).

Identification and partnership building with potential satellite training institutions is under way. Substantial effort is required to first identify suitable organizations to serve as satellite centres and then build the required capacity for them to become fully operational. There are currently 18 functional satellite centres operating across AMR, AFR, EUR and SEAR. The two RTCs in EMR and the French-speaking African subregion are each holding robust discussions with one or more potential satellite centres. The RTC in WPR, one of the newest centres, is currently exploring partnership opportunities within the region.

Progress in 2023

- TDR RTCs counted over 4,300 participants registered for eight sessions of the IR MOOC held across the year – delivered in English, French and Spanish. In addition, 40 in-person TDR training courses were conducted with 1,257 trained individuals (802 identified as women [64%] within the RTC network).
- New MOOC IR modules, online courses, training documents and IR sensitization videos were completed on: awareness raising in IR, Chaga's disease in Ecuador, community engagement, COVID-19 vaccination in Ghana, Ethics social innovation, Trachoma in Ethiopia, and).
- The Online IR toolkit was translated into Russian and the IR toolkit module on One Health content was developed in English, as part of the ADP partnership.
- A guide on how to conduct a scoping review was finalized and made available in French, English, and Mandarin, with accompanying instructional videos in French and English.
- The script for a third IR case example on visceral leishmaniasis has been written and the video recording stage is being planned.
- The script for an online MOOC module specific to IR ethical considerations has been written and the video recording phase is being planned.
- Eighteen sensitization videos in English and Spanish were created to help raise awareness of the value and potential of IR among both academic and government organizations. These new sensitization products are intended to help managers and other senior leaders grasp the need for IR and hence support their staff in pursuing such projects.
- The Scoping Review Guide and accompanying videos are now available in French, English, and Mandarin.
- In 2023, an IR ethics training course was disseminated.

Remaining risks and challenges

Risks are associated with budgetary limitations linked to limited regional networking and individual or institutional capacity strengthening, and can negatively impact the possibilities to support the end-to-end process of IR education including educational research grants, to evidence generation with health system impact. Further, budget deficit may hinder the programme from developing additional relevant online/MOOC content adapted to the 2024–29 strategy while also updating and refining the existing course repository, to make sure the TDR role as global leader in IR online and hybrid training for LMIC remains.

Contributions towards TDR key performance indicators

Partnerships and collaborations:

Universitas Gadjah Mada, Indonesia; Universiti Malaya, Malaysia; United Nations University International Institute for Global Health, Malaysia; Institute for Health Systems Research, Malaysia; Pontificia Universidad Católica del Ecuador; Centro Internacional de Entrenamiento e Investigaciones Médicas (CIDEIM), Colombia; University of Ghana School of Public Health; Institut Pasteur de Tunis; Astana Medical University, Kazakhstan; Université Cheikh Anta Diop De Dakar; London School of Hygiene and Tropical Medicine, United Kingdom; University of Montreal, Canada; The Institute for Tropical Medicine, Belgium; B.P. Koirala Institute of Health Sciences, Nepal; and the École polytechnique fédérale de Lausanne, Switzerland.

Leverage created by this project:

AFRO GH \$50 000; AFRO SN \$7 292 800; AMRO \$53 200; EMRO In-kind only; EURO \$600; SEARO In-kind only; WPRO \$29 147.

Gender aspects and vulnerable populations:

1. Within the RTCs, 64% of the contributing staff are women (72 women out of 113 contributing staff).
2. Over 500 registrations for the MOOC entitled “Incorporating an Intersectional Gender Perspective in Implementation Research” facilitated by the RTC in Ghana.
3. Gender equity actively supported through positive affirmative actions in selection of participants and beneficiaries of RCS organized trainings and courses.

Training: 4362 MOOC registrations; 1257 students taking part in RTC courses.

Strengthened institutions and/or networks:

The TDR RTCs and satellite institutions have been strengthened through continuous interaction linked to capacity building in IR, as well as through the specific task of RTCs to strengthen satellite institutions in the region.

Publications: Four (#1–4)

Results dissemination and uptake:

Academic publications evaluating the translated MOOC courses under way.

Plans for 2024–2025

The main focus of the biennium will be to ensure strategic attention to the global challenges and direction of the new TDR 2024–2029 strategy. This will ensure RTC and training activities are aligned and build on consolidated methods as well as innovative approaches during the coming years. The general basic competencies in IR will be enhanced by additional specialized trainings and RTC activities corresponding to strategic needs.

TDR/RCS will continue to work on dissemination of courses in all WHO regions in different languages and with contextualized regional profiles. Satellite institutions will be further promoted to ensure wide reach and uptake of essential IR courses. RTCs/MOOC will explore options and opportunities to co-design with RTCs and universities within the TDR Postgraduate Training Scheme a higher-level professional certificate in IR that builds on the success of IR/MOOC to allow aspiring IR practitioners to gain a credential beyond what is currently available. Training through professional certificates will incorporate the new MOOC content developed in 2023 and will be a mix of synchronous and asynchronous components with a capstone project comprising of an application to the TDR Impact Grants for Regional Priorities scheme.

IR leadership will be supported, including strategic support to training and research of a select cohort of individuals. Attention will be given to career and leadership mentoring, and a seed cohort following a mentor-mentee programme will be implemented and taken forward as a “train the trainers activity”.

ER 2.1.2: Postgraduate training grants

As part of TDR’s efforts to increase the capacity of both individuals and institutions in LMICs to undertake a leadership role in research on the control of infectious diseases of poverty, training grants are provided with a focus on IR. Support for postgraduate training is a TDR/RCS core area of work. Fellows generally go on to establish careers in research or public health in LMICs and become part of the TDR global network.

This scheme provides a full academic scholarship for Master degree training focused on IR, in collaboration with competitively selected universities located in low- and middle- income countries. The scheme has built cadres of skilled professionals in infectious diseases of poverty across Africa, Asia and Latin America who have become influential figures in research and public health.

Since 2015, the TDR Postgraduate Training Scheme has comprised a network of ten universities in disease-endemic regions, selected on an open competition basis:

1. James P. Grant School of Public Health (JPGSPH), BRAC University, Dhaka, Bangladesh
2. The National School of Public Health (NSPH), University of Antioquia, Medellín, Colombia
3. School of Public Health, University of Ghana, Accra, Ghana
4. School of Public Health, Indian Institute of Health Management Research (IIHMR), Jaipur, India
5. Faculty of Medicine, Universitas Gadjah Mada (UGM), Yogyakarta, Indonesia
6. Faculty of Health Sciences, American University of Beirut (AUB), Lebanon*
7. University of Sciences, Techniques and Technologies Bamako, Mali
8. University of the Witwatersrand, Johannesburg, South Africa
9. Department of Public Health, University of Zambia, Lusaka, Zambia*
10. Institut de Santé et Développement, Université Cheikh Anta Diop, Senegal

** Not selected for the second phase of the scheme (2022–2027). Currently finalizing the last cohort of students.*

Since the inception of the TDR scholarship scheme in 2015, the participating universities have awarded a cumulative total of **486** Master fellowships (Table 2) and eight PhD fellowships (five at the University of Ghana and three at the University of Witwatersrand). Among the **486** Master’s students, 245 (50.8%) are men, 240 (49.8%) are women and one (0.2%) is transgender. Of the eight PhD students, one is a woman.

Table 2. Gender distribution across university cohorts

	Cohort 1		Cohort 2		Cohort 3		Cohort 4		Cohort 5			Cohort 6		Cohort 7		TOTAL
University	M	W	M	W	M	W	M	W	M	W	T*	M	W	M	W	
BRAC University, Bangladesh	7	4	7	3	5	4	7	6	5	9	1	8	9	9	6	90
Universidad de Antioquia, Colombia	6	9	3	6	3	7	6	5	4	7	0					56
University of Ghana, Ghana	6	3	5	5	3	3	6	4	9	5	0	6	8			49
Indian Institute of Health Management, India	9	6														15
Universitas Gadjah Mada, Indonesia	8	8	4	6	3	7	8	7	8	12	0	5	7			83
American University of Beirut, Lebanon	4	5	3	3	1	3	4	2	4	4	0					33
Université Cheikh Anta Diop, Senegal	24	22	2	2												50
University of Zambia, Zambia	3	2	2	1	2	1	5	3	6	9	0					34
University of the Witwatersrand, South Africa	6	2	5	4	2	3	1	5	3	5	0	4	6	5	6	57
University of Bamako, Mali	10	9														19
Total	83	70	31	30	19	28	37	32	39	51	1	17	22	14	12	486

Table 3. Gender diversity overview

	Total
Men	240
Women	245
*Transgender	1

Progress in 2023

- As of December 2023, the total number of people awarded a Master's scholarship is 486.
- All universities in the second phase of the scheme actively continued with the mixed virtual and onsite trainings after the COVID-19 pandemic.
- Institut de Santé et Développement, Université Cheikh Anta Diop, Senegal and University of Sciences, Techniques and Technologies, Bamako, Mali were served 65 students from 16 French-speaking countries in West Africa. With support of the International Development Research Centre (IDRC) of Canada, four students were selected for an MPH with a focus on One Health.
- University of Bamako, selected the first cohort of 19 students in March 2023.

1. James P. Grant School of Public Health, BRAC University, Dhaka, Bangladesh

The James P. Grant School of Public Health (JPGSPH) at BRAC University has been implementing the TDR Postgraduate Training Scheme since 2015 with a view to developing capacity in IR for public health researchers in the countries of South-East Asia and Western Asia Pacific regions. This year, BRAC university has also been providing support for the candidates in the Eastern Mediterranean Region. Starting with the first cohort in 2016, as of now, the scheme has recruited seven cohorts with a total number of 90 TDR Fellows. The fellows of the first six cohorts have already graduated.

- **COHORT SEVEN:** The seven cohort comprises six women and nine men from Afghanistan, Bangladesh, India, Nepal, Papua New Guinea, Pakistan and Yemen. Students started their public health learning on 23 January 2023 and are expected to be graduated in January 2024.

2. The National School of Public Health, University of Antioquia, Medellín, Colombia

The National School of Public Health at the University of Antioquia in Colombia offers students from LMICs in Latin America and the Caribbean a two-year full-time Master's programme in epidemiology, with content and emphasis on IR. Since 2015, the National School of Public Health, has enrolled five cohorts with 56 students. All the students from the first four cohorts have graduated.

- **COHORT FIVE:** The fifth cohort is composed of 11 students (seven women and four men) who come from Bolivia, Colombia, Costa Rica, Dominican Republic, Haiti, Honduras, Mexico, Paraguay. The students commenced their course in August 2023. They are expected to graduate in October 2025.

3. School of Public Health (SPH), University of Ghana, Accra, Ghana

Master students

The university offers a 12-month MPH. The programme is designed to provide students with classroom and field training, as well as supplementary workshops and seminars in IR. The first semester focuses on coursework, while the second semester is devoted to both course work and research project activities that include proposal development, conducting research, report writing and presentation. Since the inception of the programme in 2015, there have been 49 cohorts of Master students. To date, 35 students have successfully completed their MPH.

- **COHORT SIX:** The sixth cohort is composed of 14 students (eight women and six men) who come from Burundi, Cameroon, Gambia, Ghana, Malawi, Namibia, Nigeria, United Republic of Tanzania and Zambia. Students are expected to graduate in January 2024.

PhD students

- Since the inception of the programme in 2015, there has been one cohort of PhD students. Five PhD students (four men, one woman) started in January 2016 and all students have graduated.

4. School of Public Health, Indian Institute of Health Management Research, India

The School of Public Health, Indian Institute of Health Management Research joined the second phase of the TDR Postgraduate Training Scheme in 2021 to support students from EMR, SEAR and WPR.

- **COHORT ONE:** In the first cohort, 12 international students and three national students were selected in mid-2022 amongst 44 eligible applicants. This includes six women and nine men from Afghanistan, Egypt, Nepal, Sudan, Somalia, Tunisia, India and Yemen. The first cohort commenced their study on October 2022 and are expected to graduate in September 2024.

5. Faculty of Medicine, Gadjah Mada University (GMU), Indonesia

Since December 2015, Universitas Gadjah Mada, in collaboration with TDR, offers a 24-month MPH with a special programme in IR on tropical diseases. The programme curriculum consists of participatory teaching methods, such as mini-lectures, case and field studies, and a course project. To date, this programme has graduated 51 alumni (cohort 1, cohort 2, cohort 3, and cohort 4) which are from various countries in SEAR (seven countries) and WPR (five countries). Currently there are 20 students in cohort 5 and 12 students in cohort 6.

- **COHORT SIX:** The sixth cohort consists of 12 students (seven women and five men) from nine countries: Bangladesh, India, Malaysia, Myanmar, Nepal, Philippines and Indonesia. The students started the course in September 2022 and will finish in September 2024.

6. Faculty of Health Sciences, American University of Beirut (AUB), Lebanon

Since 2015, the Faculty of Health Sciences at the American University of Beirut (AUB) has hosted the TDR scholarship scheme which has allowed for the provision of full scholarships for an MPH and a Master in Epidemiology to five cohorts of 33 students. All TDR-supported students enrolled in a specially developed three-credit IR course. All students from cohorts 1 to 4 have graduated. Currently there are six students in cohort 5 enrolled at AUB. As AUB was not selected for the second phase of the scheme, this will be the last cohort of students from this university.

- **COHORT FIVE:** This cohort comprises eight students (four women and four men) from Afghanistan, Pakistan, the occupied Palestinian territories, Jordan and the Syrian Arab Republic. The students started the course in September 2021 and graduated in mid-2023.

7. University of Sciences, Techniques and Technologies Bamako, Mali

In 2021, the University of Sciences, Techniques and Technologies Bamako (USTTB), Mali, was selected for the second phase of the scheme, subject to availability of additional funding. This year, with generous support from Germany's Deutsche Gesellschaft für Technische Zusammenarbeit, USTTB joined the scheme.

- **COHORT ONE:** In late 2022, a call for applications was announced for 19 placements in early 2023. The selected students, nine of which are women and 10 men, come from Benin, Burkina Faso, Burundi, Cameroon, Côte d'Ivoire, Madagascar, Mali, Mauritania, Niger, Democratic Republic of the Congo, Central African Republic, Guinea, Chad, and Togo.

8. Université Cheikh Anta Diop in Dakar (UCAD), Senegal

In early 2021, the Université Cheikh Anta Diop in Dakar, Senegal, was selected to join the Postgraduate Training Scheme, filling the training gap in French-speaking countries.

- **COHORT ONE:** In early 2023, 46 selected students (22 women and 24 men) from 16 countries in West Africa: Benin, Burkina Faso, Burundi, Cameroon, Chad, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Guinea, Madagascar, Mali, Mauritania, Niger, Rwanda and Senegal are enrolled in the programme.

9. University of the Witwatersrand, Johannesburg, South Africa

University of Witwatersrand has been supporting the TDR Postgraduate Training Scheme since 2015 by offering an 18-month Master of Science (MSc) and a 42-month Doctorate (PhD) in Implementation Science to a total of 46 students. In 2023, 10 MSc students (six women and four men) completed their Master's programme. Eleven students (including six women), from the Democratic Republic of the Congo, Gambia, Ghana, Kenya, Malawi, Nigeria, South Africa, Uganda, Zambia, and Zimbabwe were selected in 2023 for placement in early 2024.

- **PhD student:** The last PhD student commenced study in February 2018, and successfully completed study in 2023.

10. School of Public Health, University of Zambia, Lusaka, Zambia

The IR programme is part of a 24-month full-time postgraduate course offered by the School of Public Health, through a MSc in Epidemiology, an MPH in Health Promotion and Education; and an MPH in Health Policy and Management. IR methodology and theory are embedded in the MPH programmes and provide an opportunity for all postgraduate students to gain IR skills. The TDR-supported students also acquire writing skills for research publications and policy briefs, as well as knowledge translation skills. During fieldwork, TDR-supported students are attached to health institutions or study sites in their home countries. To date, 19 students from cohort one (two men and three women), cohort two (two men and one woman), cohort three (two men and one woman) and cohort four (five men and three women) have graduated.

- **COHORT FIVE:** The cohort of five students started January 2022, including 15 students (nine women and six men) from the Democratic Republic of the Congo, Kenya, Malawi, Namibia, Uganda, United Republic of Tanzania, and Zambia. The students graduated in December 2023.

Selection of a French-speaking university in West Africa to participate in the TDR Postgraduate Training Scheme

As described earlier, the TDR Postgraduate Training Scheme is supported by the Directorate for Development Cooperation and Humanitarian Affairs (Ministry of Foreign and European Affairs) of the Government of Luxembourg; the Deutsche Gesellschaft für Technische Zusammenarbeit, Germany; the Université Cheikh Anta Diop in Dakar (UCAD), Senegal; and the University of Sciences, Techniques and Technologies of Bamako (USTTB), Mali. The USTTB joined in the second phase of the TDR Postgraduate Training Scheme and serves as a sub-regional training centre for French-speaking countries in sub-Saharan Africa. In 2023, the IDRC supported the selection of four students for an MPH commencing in 2024 at UCAD, Senegal with a focus on One Health.

EIGHT UNIVERSITIES PARTICIPATING IN THE 2ND PHASE OF TDR POSTGRADUATE TRAINING SCHEME

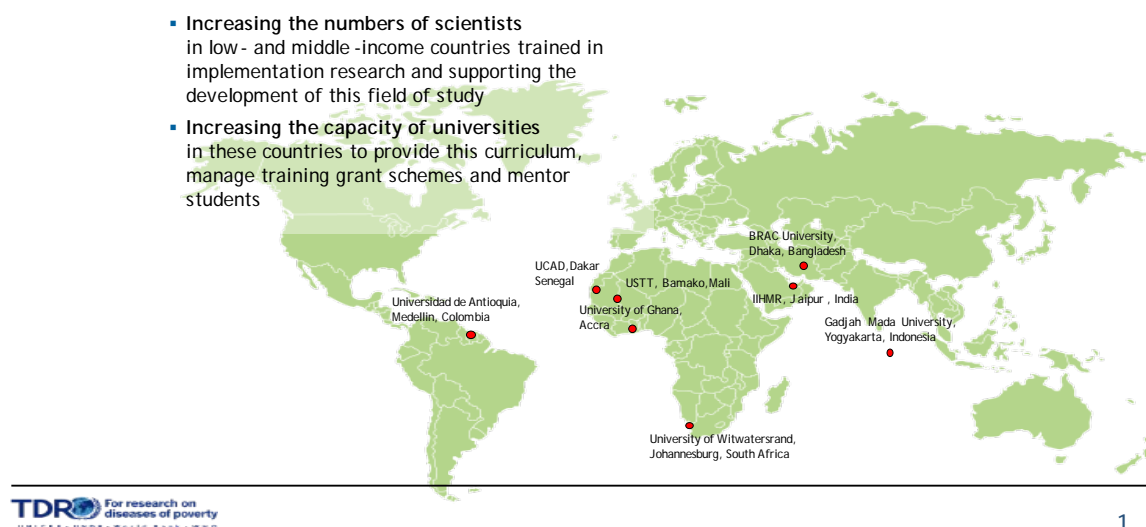


Figure 2. Postgraduate training scheme

Development of IR core competencies framework

In collaboration with Johns Hopkins University, HRP and the universities supporting the TDR Postgraduate Training Scheme, a framework of core competencies in IR was developed to address a lack of consistent curriculum for IR training programmes globally, especially a curriculum that is responsive to IR training needs in LMICs. The framework identified 59 competencies, and 52 sub-competencies relevant for teams addressing implementation challenges surrounding effective delivery of lifesaving programmes and health services, in real time and under real life conditions, through research embedded in their local contexts. The face and content validity of the framework was established via global online surveys, and a modified-Delphi process with IR training coordinators and academics affiliated with LMIC institutions, and global IR experts from both LMICs and high-income countries.

A theory-based approach was used to define proficiency levels for the competencies and sub-competencies at three levels: knowledge of the competencies (level 1), limited practical experience applying the knowledge of the competencies (level 2), and expert practical experience applying the knowledge of the competencies (level 3). Seven academic LMIC institutions involved in IR training under the Special Programme for Research and Training in Tropical Diseases (TDR) and HRP were recruited to participate in a pilot assessment to further establish the validity and utility of the framework for guiding IR training programmes in LMICs, and examining the performance of students using a multi-method approach.

These institutions and training programmes include: 1) Universidade Estadual de Campinas, Brazil; 2) National School of Public Health, Universidad de Antioquia, Colombia; 3) University of Ghana; 4) University of Witwatersrand, South Africa; 5) School of Public Health, University of Zambia; 6) Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Indonesia; and 7) Hanoi School of Medicine, Viet Nam. First, a competency mapping exercise was conducted to map the coverage gaps under each of the training programmes. Second, assessment tools based on the framework were developed for conducting self-assessment and objective assessment of

participants in IR. Third, the assessment tools were applied to 166 participants across five (out of the seven) institutions. A preliminary assessment of IR training programmes in the participating universities, using the core competency framework and assessment tools, revealed that the different programmes are in various stages of development, and some are more established than others.

The framework used to address the IR training gaps amongst the universities in the second phase of the scheme. This exercise will be completed in mid-2023 and the developed curriculum is available as an online tool for the MPH programmes.

Remaining risks and challenges

The COVID-19 pandemic in 2020 posed a particular challenge to the delivery of MPH training across seven universities. It was challenging to transfer the face-to-face teaching materials to virtual training. It has however provided the opportunity to plan for strengthening their capacities in developing online IR course materials across seven universities. Because of travel restrictions, students were unable to do field work for their thesis. We encouraged students to use secondary data for their thesis.

Contributions towards TDR key performance indicators

Partnerships and collaborations:

As a result of this scheme, TDR developed strong partnerships with the eight universities participating in the scheme and promoted several collaborations.

- With the generous support of the Directorate for Development Cooperation and Humanitarian Affairs of the Ministry of Foreign and European Affairs of the Government of Luxembourg, TDR successfully expanded the scheme to include the Université Cheikh Anta Diop in Dakar, Senegal to serve students from French-speaking countries in sub-Saharan Africa. TDR is currently in discussion with other donors to support the scheme.
- IR courses have been institutionalized across seven universities and all students received relevant training in IR, e.g. Gadjah Mada University has TropEd accreditation to facilitate broader European Credit Transfer and Accumulation System. A course on IR has been accredited and there are. The University of Gadjah Mada is also collaborating with the Network of Humanitarian Action (NOHA) Master's Programme. NOHA is an education and training programme that offers inter-university and multidisciplinary Joint Master Degrees. Since 2018, NOHA has sent nine students to take several courses within the IR programme.
- As a result of participation in the TDR postgraduate scheme, the University of Witwatersrand has successfully renewed its grant with the National Institutes of Health (NIH) Fogarty International Center, Washington DC, to train PhD candidates of southern Africa origin. The scheme has also gained visibility among CARTA fellows as they participate in the implementation science courses offered by the University of Witwatersrand.
- There has also been increasing recognition of the scheme within WHO programmes, e.g. the Department of Reproductive Health and Research carried out a joint field visit with TDR to review the implementation of the Department's similar scheme at the University of Ghana.

Leverage created by this project:

In all the participating universities, the main leverage is in-kind contributions made by the faculty and personnel based at the collaborating institutions, in terms of staff time and research resources. Furthermore, the collaborating institutions have the opportunity to utilize the research findings as evidence to influence practice and policy or as a basis for further research.

Gender aspects and vulnerable populations:

TDR is committed to equality, diversity and inclusivity in science. Applicants are encouraged to apply irrespective of gender identity, sexual orientation, ethnicity, religious, cultural and social backgrounds, or (dis)ability status. As mentioned earlier, TDR reviews and approves the call prior to its publication. The selection process involves consideration of academic merit and geographical and gender equity.

TDR/RCS monitors gender distribution among grant applicants and recipients, with the goal of ensuring gender equity across TDR activities. Among the **486** Master's students, 245 (50.8%) are men, 240 (49.8%) are women and one (0.2%) is transgender. Among the eight PhD students, eight (87%) are men and one (13%) is a woman. The challenges for women applying to these scholarships are often associated with starting a family.

Notwithstanding the underlying social, cultural and educational factors at country level beyond TDR's control, the ways of promoting gender equity that is considered by TDR (without compromising on quality and merit) include piloting flexible training schemes such as part-time training for women with families.

Training:

In 2023, the universities supporting the TDR Postgraduate Training Scheme participated in a consultation meeting to explore opportunities and needs for capacity building/strengthening on sex and gender in health research. This is a joint activity between two special programmes housed within WHO: TDR and HRP. The objective of this joint activity is to identify the existing gaps and developing relevant trainings on sex and gender in health research.

By end of 2023, the participating universities had awarded a cumulative total of 471 TDR Master's fellowships and eight PhD fellowships.

Strengthened institutions and/or networks:

There are several ways that IR capacities across these universities are strengthened. All the universities have developed capacities to deliver IR courses.

Publications: 53

Results dissemination and uptake: Identification and early engagement of all relevant stakeholders from the planning, implementing and dissemination stages of the students' projects to ensure research findings ownership and utilization to support evidence-based programme practice and policy.

Country reports or research articles published in open access peer-reviewed journals to maximize local readership and ownership.

TDR and partners arranged a symposium during the Consortium of Universities for Global Health (CUGH) in Washington DC in 2023, to raise global awareness on IR.

Arranged a workshop in IIHMR in Jaipur, India to address the IR competency gaps in the postgraduate curriculum across the network of eight universities participating in the TDR postgraduate training programme.

Plans for 2024–2025

- Continue with the issuance of new Letters of Awards for the universities selected for the second phase of the scheme.
- Training on IR ethics to be carried out across eight universities.
- Continue with development of online IR Master's programme.
- Pilot IR *Postdoctoral* programme.

ER 2.1.4: Advanced training in clinical product development: TDR Clinical Research Leadership Programme

The Gates Foundation agreed to support a new programme on Clinical Research Leadership (CRL), (2023–2028) built on the experience and evaluation of the Clinical Research and Development Fellowship (CRDF) programme. This new programme has three key features: i) it is customized to the needs of individual fellows regarding the relevant leadership and research competencies; ii) the flexible mentoring approach is suitable for fellows with family responsibilities; and iii) it maximizes opportunities for remote interaction. The proposed CRL programme comprises four main pillars: i) clinical research skills; ii) clinical research leadership skills; iii) gender equity; and iv) institutional capacity. This new scheme started in November 2022, with the first round of selection of fellows for a placement at TPOs in early 2024. A call for applications was announced in March 2023. Four hundred and thirty-seven eligible applications from 55 countries were received, with 279 men and 152 women, and six unknown genders.

Progress in 2023

Clinical Research and Development Fellowship: The 18 fellows from the last round of the CRDF Scheme have already finished their placement and developed their re-entry plan by early 2023. Re-entry plans from the 13 fellows were completed by end 2023. Two fellows are expected to complete their re-entry grant by March and June 2024. One fellow from Ethiopia who was placed in GSK Belgium, did not do his re-entry due to the political unrest in the country.

CRDF focusing on leadership development: Thirty-two placements were identified and offered by 18 host institutions of different types in a call for applications launched in February 2023. *Pharmaceutical companies* included: GSK Biologicals, Belgium and the Institute for BioMedical Research and Novartis AG in New Jersey, United States. Product development partnerships included: the Drugs for Neglected Diseases *initiative* (DNDi) and the Foundation for Innovative New Diagnostics (FIND), Switzerland; the European Vaccine Initiative (EVI), Germany; and the International Vaccine Institute (IVI), South Korea. *Academic institutions* included the Luxembourg Institute of Health; the Barcelona Institute for Global Health (ISGlobal), Spain; the Swiss Tropical and Public Health Institute (STPHI); the Infectious Diseases Data Observatory (IDDO) at the Centre for Tropical Medicine and Global Health, Oxford, United Kingdom; and the University of Cape Town, South Africa. For the first time, a *biotech company*, BioNTech in Germany, was also included as a partner. Other host institutions included the Ugandan Virus Research Institute (UVRI), Uganda and Fiocruz, Brazil. During the call for applications, TDR was approached by the International Severe Acute and emerging Infection Consortium (ISARIC) at the University of Oxford, United Kingdom, and the Medicines for Malaria Venture (MMV), Switzerland, to train fellows. Thus, finally 33 placements were offered by 20 TPOs.

In response to the call, TDR received 437 applications. Four were excluded because the applicants have permanent positions in high-income countries (Germany and the USA). Of the 433 remaining applications, 151 were from women (34.7%) and 282 from men (65.3%), from 53 countries. A geographical distribution of the applications received is given in Figure 1. Among these, 343 (79.6%) were from the WHO African Region (AFR); 50 (11.6%) from the WHO Eastern Mediterranean Region (EMR); twenty (4.6%) from the WHO Region of the Americas (AMR); 16 (3.7%) from the WHO South-East Asia Region (SEAR), and one each from the WHO European Region (EUR) and the WHO Western Pacific Region (WPR).

Due to the high number of applications received, in addition to the eligibility criteria, TDR identified the top applications from each country based on the clinical research experience of the fellow, the number of clinical research papers published and how the fellow proposes to use the skills gained during the fellowship upon returning to their home institution. Seventy-nine applications from 39 countries were short-listed. Among these, 54 (68.5%) were from AFR; 12 (15%) from EMR; five (6.5%) from AMR; seven (9%) from SEAR; and one (1%) from WPR. Women are coming from 27 countries. Among these, 23 (59%) were from AFR; six (15.5%) from EMR; five (13%) from SEAR; four (10%) from AMR; and one (2.5%) from WPR.

The 79 short-listed applications were sent to TPOs.

As a result, during the months of July, August and September 2023, 53 candidates were interviewed by 15 TPOs, with the vast majority from AFR (45/53; 85%). These fellows are from Burkina Faso (3), Côte d'Ivoire (1), the Democratic Republic of the Congo (3), Ethiopia (3), Gabon (1), the Gambia (1), Ghana (2), Guinea (2), Kenya (2), Malawi (1), Mali (1), Mozambique (6), Nigeria (2), Rwanda (1), Senegal (3), Sierra Leone (1), South Africa (1), Uganda (5) and the United Republic of Tanzania (6). Four were from AMR: Brazil (1), Mexico (2) and Peru (1) and five were from SEAR: Bhutan (1), Indonesia (2), Nepal (1) and Thailand (1). Among the 53 short-listed applicants, there were 30 women (56.6%) and 23 men (43.4%). Twenty-two women are from AFR: Côte d'Ivoire (1), the Democratic Republic of the Congo (2), Ethiopia (3), the Gambia (1), Kenya (1), Malawi (1), Mali (1), Mozambique (4), Nigeria (1), Senegal (2), United Republic of Tanzania (3) and Uganda (2). Three are coming from AMR: Brazil (1), Mexico (1) and Peru (1); and five from SEAR: Bhutan (1), Indonesia (2), Nepal (1) and Thailand (1).

Of the 53 candidates, 20 fellows (six men, 14 women) were selected for placement by 12 TPOs: DNDi (1), FIND (2) and MMV (2) in Switzerland; IDDO in the United Kingdom and South Africa (2); ISARIC in the United Kingdom (1); GSK-Biologicals in Belgium (4). BioNTech (1) and EVI (1) in Germany; the Luxembourg Institute of Health, in Luxembourg (1); IVI in South Korea (1); ISGlobal in Spain (3); and IVI (1) in Seoul, South Korea. One fellow will be trained jointly by FIND in Switzerland and ISGlobal in Spain, with a placement of six months in each TPO. It was initially agreed that two fellows would be trained for six months in their home institution in Mozambique and Indonesia and six months at ISGlobal and FIND, respectively. However, on 16 November 2023, FIND informed us that, due to the financial crisis, they were unable to dedicate staff time to mentor the two fellows. Therefore, it was arranged for Dr Dinis Nguenha to be placed at ISGlobal and Dr Cindy Kesty to be placed at IDDO, Oxford, each for a period of 12 months.

Fifteen fellows are from AFR: Burkina Faso (1), the Democratic Republic of the Congo (1), the Gambia (1), Ghana (1), Kenya (1), Mozambique (3), Senegal (1), South Africa (1), United Republic of Tanzania (3) and Uganda (3); one fellow is from AMR: Peru (1); and two are from SEAR: Thailand (1) and Indonesia (1).

Of the 20 fellows selected, fourteen (70%) are women. They are from Burkina Faso (1), Ghana (1), Indonesia (1), Kenya (1), Mozambique (2), Peru (1), Senegal (1), South Africa (1), United Republic of Tanzania (1), Thailand (1) and Uganda (3).

Remaining risks and challenges

The COVID-19 pandemic posed a particular challenge to place CRDF fellows in the different TPOs. Potential remote online training was discussed with TPOs, with hands-on learning-by-doing approaches being highly appreciated by fellows and TPOs in 2020. However, the pandemic necessitated a switch to remote training, and the provision of a mentor at each relevant TPO. There is no substitute for the opportunities provided by placement at the TPOs, as this allows interaction with an identified mentor and the different research groups. This arrangement generally enhances the development of leadership skills and the levels of professional support and peer-to-peer support, including group reflection exercises. In addition, while many online training resources are available, they are insufficient on their own. Learning-by-doing is essential for deepening knowledge and discovering how to use acquired knowledge in complex situations, such as performing clinical research. This is the basis of the concept for placement of CRDF fellows in TPOs. However, in the new CRL scheme, there is still some space for remote trainings in case of any emerging public health emergencies or fellows with young families.

To ensure the sustainability of the CRL programme, it is imperative to collaborate with TPOs and share costs. TDR will actively seek potential partners interested in supporting the programme to explore opportunities for collaboration.

Contributions towards TDR key performance indicators

Partnerships and collaborations:

BioNTech SE; Drugs for Neglected Diseases *initiative* (DNDi); European Vaccine Institute (EVI); Fiocruz – Fundação Oswaldo Cruz, Brazil; Foundation for Innovative New Diagnostics (FIND), Switzerland; GSK Biologicals, United Kingdom; Infectious Diseases Data Observatory (IDDO) at the Centre for Tropical Medicine and Global Health at the University of Oxford; International Vaccine Institute (IVI), South Korea; ISGlobal Barcelona Institute for Global Health and the University of Barcelona; Luxembourg Institute of Health Competence Center for Methodology and Statistics (CCMS); Novartis, Switzerland; Swiss Tropical and Public Health Institute (Swiss TPH); University of Cape Town, South Africa; and the Ugandan Virus Research Institute/International AIDS Vaccine Initiative, HIV Vaccine Programme (UVRI-IAVI).

Leverage created by this project:

Based on the documentation received from two pharmaceutical companies, the estimated in-kind contribution for a one-year assignment for one fellow is around US\$ 65 000. This includes mentoring time; conference attendance; relocation agency; two monitoring trips (calculated as cost to monitor sites in Africa); public transport; travel to Geneva for mentoring; insurance (site) and miscellaneous costs depending on the location. The total for 20 fellows is US\$ 1.2 million.

Gender aspects and vulnerable populations:

Since the inception of the CRDF scheme, there have been more men than women candidates. This issue has been tackled by developing a gender challenge contest which was organized in 2018 using the TDR guide on designing, implementing and evaluating a challenge contest.

(<https://www.who.int/tdr/publications/year/2018/crowdsourcingpractical-guide/en/>)

During this current round, in addition to merit, TDR ensures that gender and geographical representations are taken into consideration during the selection process.

Training:

The training offered by TPOs is mainly hands-on rather than through a degree course. The leadership training plan developed at the beginning of the fellowship is aligned with the needs of the home institution and according to the RCS framework for core competencies in clinical research. All numbers are given in the text.

Strengthened institutions and/or networks:

Institutions in LMICs are strengthened through the joint research capacity building with TPOs during the reintegration plan of each fellow. In 2022, reintegration plans were implemented in the following institutions: School of Medicine, University of Zambia, Institute of Medical Research and Medicinal Plants Studies, Cameroon; the Uganda Virus Research institute; Instituto de Investigación Médica Mercedes y Martín Ferreyra, Argentina; National Malaria Control Programme, Madagascar; and the Armauer Hansen Research Institute, Ethiopia.

Publications: The list of the publications of the earlier cohort is pending.

Results dissemination and uptake: Pending.

Plans for 2024 2025

Clinical Research Leadership Programme

- Continue with the selection of the second cohort of fellows
- Develop and disseminate leadership curriculums
- Expand the number of TPOs outside sub-Saharan Africa

ER 2.1.6 Structured capacity building in IR (UNDP Access and Delivery Partnership) in collaboration with IMP unit

The UNDP/ADP is a unique collaboration between the Government of Japan and the United Nations Development Programme (UNDP), which together with its partners WHO, the Special Programme for Research and Training in Tropical Diseases at WHO (TDR) and PATH, work together to leverage expertise within each organization to implement a range of interventions in LMICs to promote equitable, sustainable and timely access to cost-effective and quality-assured new health technologies for tuberculosis (TB), malaria and NTDs and advancing UHC and the SDGs.

ADP is a global project that has been implemented over two phases; the initial phase was implemented from 2013 to 2018, and the ADP scale up phase from 2018 to 2023. The current scale up phase is designed to expand its scope, through extending the range of expertise and technical assistance support and by increasing the number of focus countries in which ADP implements a complementary range of activities. With anticipation of another project phase beyond 2023 and based on the findings of an evaluation exercise undertaken in 2023 to inform design and scope aspects of the next project phase.

The implementation of ADP support has aligned and contributed to health system efficiency and resilience across its nine focus countries (Bhutan, Burkina Faso, Ghana, India, Indonesia, Malawi, Senegal, United Republic of Tanzania, and Thailand), as well as other LMICs that have benefited from ADP's South-South technical exchanges and outreach.

Progress in 2023

- IR module on One Health content developed and undergoing language editing.
- IR toolkit translated to Russian
- IR conducted in Ghana and the United Republic of Tanzania. Three articles published, and one manuscript is undergoing peer review.

Ghana

The University of Ghana, School of Public Health and its IR partners based in the Ghana health services, conducted three demonstration IR projects. Two peer-reviewed articles have been published and one is undergoing peer review. The demonstration projects have enhanced IR knowledge acquisition and application of competencies.

United Republic of Tanzania

The National Institute for Medical Research, the neglected tropical diseases control programme, Ministry of Health and regional and district NTD coordinators, developed and submitted a manuscript describing their experiences of incorporating IR in the national Neglected Tropical Diseases Control Programme operational plan in line with the WHO NTD roadmap 2021–2030, as part of the health sector strategic plan V (2021–2026). In 2024, a joint TDR/PATH dissemination workshop is planned.

Remaining risks and challenges

The main challenge following IR training/workshops is the availability of funding opportunities or resources to allow learners to apply the acquired knowledge and competencies. To this end, TDR is piloting a small grant approach for IR demonstration projects. In 2023, outcome of this approach has been demonstrated through the development and publication of articles. Further risks beyond control related to budgetary constraints and availability of new interventions, may limit activities.

Contributions towards TDR key performance indicators

Partnerships and collaborations:

The ADP partners, UNDP and PATH, are part of the project implementation at country level, in addition to their specific and complimentary roles in ADP projects. The collaboration includes joint planning with distinct objectives but contributing to the same goal and impact. The UNDP country focal points and PATH, in some ADP focus countries, provide online and off-line support to research and training teams.

Leverage created by this project:

Both partners have made in-kind contributions of their expertise and time during the concept development phase, and are involved in the project implementation activities, including liaison and advocacy with in-country stakeholders.

Gender aspects and vulnerable populations:

No gender specific aspects were addressed in the current reporting period. However, it is anticipated that some participant proposals could identify vulnerable populations as part of their stakeholder's engagement in the IR demonstration projects. In these cases, such vulnerable populations will not receive any direct immediate benefit from the IR projects. Any future benefits will be realized after the research findings are incorporated into the health system.

Training:

The blended IR training workshops and MOOC sessions undertaken during the current reporting period did not include advanced degrees, diplomas, or certificate registration for the participants. At the end of the workshops, it is anticipated that the participants will understand and appreciate the main characteristics of IR, acquire some knowledge and skills for developing IR proposals and conduct their projects in the context of programme priorities.

Strengthened institutions and/or networks:

The ADP community platform is designed to support interactions for individuals and teams, including the establishment of mentor-mentee pairings. The participating institutions enhanced their grant management and reporting (technical and financial) capabilities.

Publications: Three articles published (#4–6) and one is undergoing peer review.

Results dissemination and uptake:

Identification and early engagement of all relevant stakeholders and partners including implementers, policy-makers and communities from the planning, implementing and dissemination stages of the IR activities and projects to ensure research findings ownership and utilization to support evidence-based programme practice and policy.

Country reports or research articles published in local or regional open access peer-reviewed journals to maximize local readership and ownership.

Plans for 2024–2025

The priorities for 2024 will be the development, translation and digitalization of an IR module on One Health including development of French version MOOC on One Health.

The other priority, and in line with the budget allocated to RCS in the next phase of the ADP project, will be the expansion of IR demonstration project grants and enhanced use of the mentorship guidance.

ER 2.1.7 Strengthening operational research capacity in Global Fund supported programmes

Progress in 2023

- SORT IT courses, modules 1 to 3 conducted in Guinea (French) and Kenya (English) hosted by national institutions and facilitated/mentored by national SORT IT alumni. 24 operational research manuscripts are in preparation.
- IR conducted in Ghana, Malawi and the United Republic of Tanzania. Three articles published, and one manuscript is undergoing peer review.

Designing and conducting operational research (OR) locally contributes to finding solutions in the local context for problems associated with infectious diseases of poverty. Despite this potential benefit and previous efforts and advocacy for OR from different stakeholders (including TDR) OR is not always routinely incorporated in control activities funded by the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). However, due to considerable variations from one country to another, and between programmes with regards to the needs, demands, absorption capacity and funding, structured OR activities have remained very low. There is an urgent need to provide specific technical support to programmes receiving GFATM grants in developing OR agendas, integrating them in national strategic plans and GFATM applications, while prioritizing human and technical research capacity to strengthen local OR capabilities in disease control programmes. In

consultation with Structured Operational Research and Training Initiative (SORT IT), alumni based at country level, and in close collaboration with other country stakeholders, RCS has initiated technical assistance for the inclusion of OR component into national strategic plans and GFATM applications. The disease focus is malaria and tuberculosis as two of the priority diseases of poverty within the remit of current TDR strategy. The proposed activities emanate from an analysis of needs and opportunities undertaken by RCS, with collaboration of Swiss Tropical and Public Health Institute (STPHI). The analysis included the development of a technical assistance plan and recommendations to integrate the SORT IT model within GFATM grants in selected countries. The cyclical nature of GFATM applications ensures a continuous opportunity for programmes to undertake OR and for TDR to routinely avail technical support to countries submitting or renewing their GFATM grants. This situation augurs well with the establishment of a new ER with a modest undesignated funding allocation that will leverage GFATM support and has potential to raise DF. Although this expected result is intricately dependent on GFATM grants, the technical support activities are applicable to any other funding sources committed to OR at country level.

Progress in 2023

- SORT IT courses, modules 1 to 3 conducted in Guinea (French) and Kenya (English) hosted by national institutions and facilitated/mentored by national SORT IT alumni. 24 operational research manuscripts are in preparation.

Côte d'Ivoire. A senior SORT IT alumni based in the country has initiated stakeholder engagement of GFATM supported HIV/AIDS, malaria and tuberculosis programme staff within the Ministry of Health and its key stakeholders. This engagement is aimed to: i) identify the critical steps in the strategic plan that promote the integration of OR in GFATM grants; ii) identify the key persons/institutions mandated to make decisions on the OR component of GFATM application; iii) set milestones and outputs that include tracking of funds receipt and disbursement to enhance rapid implementation and timely reporting in line with GFATM schedule/requirements; and iv) outline the assessment and follow up on the use of OR findings in programme planning and review, including specific performance and success indicators and means of verification. A manuscript sharing the experience is in preparation.

Remaining risks and challenges

The ongoing political and security situations in several west African countries present challenges and risks towards regional networking and development of south-south collaborations. Mitigation action include identifying local experts and institutions that can provide support and mentorship to trainees, in addition to monitoring and responding to the evolving circumstances.

Contributions towards TDR key performance indicators

Partnerships and collaborations:

The external partners for this project are disease control programmes and individual SORT IT alumni at country level. This partnership represents added value for the programme in form of OR skills for staff, and improved evidence-based performance. The SORT IT alumni could advance their careers and raise their local visibility due to the expanded OR projects. There is potential for the establishment of institutional collaborations between the programmes and the SORT IT alumni's host institutions.

Leverage created by this project:

All stakeholders and country-based collaborators make in-kind contributions of their expertise and time during the stakeholders' engagement and consultations. When the grant is approved, they are involved in the project implementation activities, including liaison and advocacy for OR findings utilization among the relevant in-country stakeholders. The GFATM grant support for OR provided to programmes constitute the leverage amounts.

Gender aspects and vulnerable populations:

Apart from the individual SORT IT alumnus and SORT IT course participation, no gender specific aspects were addressed in the current reporting period.

Training:

The extensive programme engagement sessions undertaken by SORT IT alumni during the current reporting period did not include advanced degrees, diplomas, or certificate registration for the participants. At the end of these sessions, it is anticipated that the programme personnel will understand and appreciate the main characteristics of OR undertaken within the programmes and led by them, acquired knowledge and soft skills for advocating for OR competent in GFATM grant application and national strategic plans in the context of programme priorities.

Strengthened institutions and/or networks:

The stakeholder engagement at country level provided opportunity to strengthen GFATM supported programmes as the originators and users of routine data and OR findings. These interactions also provided opportunities for the establishment of collaborations and networks among the SORT IT alumni and programme personnel.

Publications: None in 2023. However, the provision of catalytic funding as part of proof of concept has led to the development of 24 manuscripts under preparation. It is anticipated that these manuscripts will be submitted for peer review and publication in open access journals in Q4 2023 or Q1 2024.

Results dissemination and uptake:

Identification and early engagement of all relevant stakeholders and partners, including implementers, policy-makers and communities from advocacy, planning, implementing and dissemination stages of the OR activities and projects, to ensure research findings ownership and utilization to support evidence-based programme practice and policy.

Country reports or research articles published in local or regional open access peer-reviewed journals to maximize local readership and ownership.

Plans for 2024–2025

The priorities for 2024 will be to provide technical and undesignated funding to one SORT IT course as part of domesticating or, while demonstrating its scope and value when undertaken within programmes and led by programme personnel.

Strategic Development Fund

Progress in 2023

Development of a module on One Health and integration into the online TDR IR Toolkit

The aim of this project is to develop and integrate an IR module on One Health as part of the bilingual online IR toolkit. The IR module on One Health was developed and is undergoing external content review.

SORT IT module 4 course in Ethiopia: Knowledge management, research communication, advocacy, and uptake

The course was hosted in Q4 2023 in Ethiopia and 11 evidence briefs were developed and dissemination opportunities identified. A booklet containing all 23 articles published in previous two SORT IT courses on NTD will be printed as an advocacy tool by the WHO country office for wider distribution at national level and among stakeholders.

Budget and financial implementation

Table 4. Approved Programme Budget 2022–2023 and funds utilized

		2022-2023								
Expected result	Research Capacity Strengthening	Revised planned costs September 2023			Implementation as at 31 December 2023			Implementation rates		
		UD	DF	Total	UD	DF	Total	UD	DF	Total
2.1.1.1	TDR support to regional training centres	1 266 000	771 000	2 037 000	1 251 127	536 537	1 787 663	99%	70%	88%
2.1.2	Targeted research training grants (MSc, PhD)	3 555 000	942 000	4 497 000	3 441 475	903 001	4 344 476	97%	96%	97%
2.1.4	Career development fellowship grants	300 000	1 700 000	2 000 000	141 789	1 207 432	1 349 220	47%	71%	67%
2.1.6	Structured capacity building in IR (ADP Initiative)	0	265 000	265 000	0	186 043	186 043		70%	70%
2.1.7 (new)	Strengthening OR capacity in Global Fund programmes	250 000	0	250 000	232 625	0	232 625	93%		93%
Total		5 371 000	3 678 000	9 049 000	5 067 015	2 833 012	7 900 028	94%	77%	87%

Table 5. Approved Programme Budget 2024–2025

		2024-2025								
Expected result	Research training and capacity strengthening	\$40m scenario			\$50m scenario			Revised planned costs at February 2024		
		UD	DF	Total	UD	DF	Total	UD	DF	Total
2.1.1.1	TDR support to regional training centres	1 050 000	200 000	1 250 000	1 250 000	200 000	1 450 000	1 064 000	415 000	1 479 000
2.1.2	Targeted research training grants in low- and middle-income countries (MSc, PhD)	3 200 000	500 000	3 700 000	6 100 000	700 000	6 800 000	3 300 000	500 000	3 800 000
2.1.4	Advanced training in clinical research leadership	0	3 000 000	3 000 000	0	3 000 000	3 000 000	100 000	3 000 000	3 100 000
2.1.6	Structured capacity building in IR (ADP Initiative)	0	500 000	500 000	0	500 000	500 000	0	500 000	500 000
2.1.7	Strengthening OR capacity in Global Fund programmes	150 000	50 000	200 000	250 000	200 000	450 000	150 000	50 000	200 000
Total		4 400 000	4 250 000	8 650 000	7 600 000	4 600 000	12 200 000	4 614 000	4 465 000	9 079 000

Projects and activities funded

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Disease(s)	Research topic(s)	Countries involved
A90399	Bakhyt Sarymsakova	Astana Medical Universitiy	Regional Training Centre Programme	60 000	Not disease specific	Research capacity strengthening	Kazakhstan
A90402	Nancy Gore Saravia	Centro Internacional de Entrenamiento e Investigaciones Medicas - CIDEIM	Centro Internacional de Entrenamiento e Investigaciones M?cas, Regional Training Center for Health Research	60 000	Not disease specific	Research capacity strengthening	Colombia
A90403	Yodi Mahendradhata	Gadjah Mada University	Regional Training Center in Health Research	60 000	Not disease specific	Research capacity strengthening	Indonesia
B40101	Phyllis Dako-Gyeke	University of Ghana	Health Research Regional Training Centre in the WHO African Region	59 974	Not disease specific	Research capacity strengthening	Ghana
B40189	Afif Ben Salah	Institut Pasteur de Tunis	Regional Training Centre for Health Research in the WHO/EMRO	56 000	Not disease specific	Research capacity strengthening	Tunisia
B80275	Robert Adamu Shey	University of Buea	Clinical Research and Develoment Fellowship placement at EVI Heidelberg round 8	3 000	Not disease specific	National programme capacity; research capacity strengthening	Cameroon
B80330	Jeannhey Christevy Vouvoungui	Fondation Congolaise pour la Recherche m?dicinale - FCRM	CRDF placement at IDDO, Oxford, Gates round 9	60 690	Not disease specific	Research capacity strengthening	Congo
P20-00043	Jocelyn Dejong	American University of Beirut - AUB	TDR Supported Postgraduate Training Scheme with a focus on Implementation Research LOA 4	395 127	Not disease specific	Research capacity strengthening	Lebanon
P20-00076	Abdalla Munir Khalid Abdalla	Individual account	TDR Clinical Research and Development Fellowship (CRDF)	3 000	Not disease specific	Research capacity strengthening	Sudan
P20-00085	Adela Ngwewondo	Individual account	TDR Clinical Research and Development Fellowship (CRDF)	3 000	Neglected tropical diseases; not disease specific	Research capacity strengthening	Cameroon
P20-00088	Parveen Abdulgani Shaikh	Individual account	TDR Clinical Research and Development Fellowship (CRDF)	25 918	Not disease specific	Research capacity strengthening	India
P20-00089	Trokon Omarley Yeabah	Individual account	TDR Clinical Research and Development Fellowship (CRDF)	25 000	Not disease specific	Research capacity strengthening	Liberia
P20-00117	Philomena Ehi Peter Asaga	National Hospital Abuja	Dr Philomena Peter Asaga CRDF	10 980	Arboviral diseases; malaria	Research capacity strengthening	Nigeria

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Disease(s)	Research topic(s)	Countries involved
P21-00172	Adama Faye	Universite Cheikh Anta Diop	Sub-Regional Training Centre for Western Africa	176 220	Not disease specific	Research capacity strengthening	Senegal
P21-00245	Nifarta Peingurta ANDREW	Individual account	CRDF placement at LIH, Luxembourg	25 000	Not disease specific	Research capacity strengthening	Nigeria
P21-00248	Noé Patrick M'Bondoukwé	Université des Sciences de la Santé	CRDF placement at LIH, Luxembourg	15 639	Not disease specific	Research capacity strengthening	Gabon
P21-00269	Pio Maurício Vitorino	Individual account	CRDF placement at ISGLOBAL	28 000	Not disease specific	Research capacity strengthening	Mozambique
P21-00426	Adanna Nwamene	University of Ghana, School of Public Health	MOOC External review & management	14 000	Not disease specific	Implementation research	Ghana
P21-00484	Pierre Dillenbourg	Swiss MOOC Service (SMS)	MOOC hosting at the SMS	76 903	Not disease specific	Implementation research	Switzerland
P21-00557	Michael James Penkunas	Individual account	RCS Consultancy - Penkunas	144 500	Not disease specific	Research capacity strengthening	USA
P22-00562	Phyllis Dako-Gyeke	University of Ghana	TDR Postgraduate Training Scheme Phase 2, University of Ghana	424 928	Not disease specific	Research capacity strengthening	Ghana
P22-00563	Shiv Dutt Gupta	Indian Institute of Health Management Research (IIHMR), Jaipur	Strengthening Capacity of LMIC Master of Public Health students in Implementation Research	151 129	Not disease specific	Research capacity strengthening	India
P22-00565	Latifat Ibisomi	University of the Witwatersrand	SECOND PHASE OF TDR POSTGRADUATE TRAINING SCHEME (2022-2026)	261 533	Not disease specific	Research capacity strengthening	South Africa
P22-00567	Yodi Mahendradhata	Universitas Gadjah Mada	Application from Universitas Gadjah Mada to participate in the TDR Postgraduate Training Scheme (second phase 2022-2026)	199 881	Not disease specific	Research capacity strengthening	Indonesia
P22-00612	Mona Awadalla Mohammed Ali Osman	University of Medical Sciences and Technology	CRDF placement at GSK-Biologics, Belgium	41 951	Not disease specific	Research capacity strengthening	Sudan
P22-00657	Esteban G. Baus Carrera	Pontificia Universidad Católica del Ecuador	Development of 2 modules of MOOC on IR	9 700	Not disease specific	Implementation research; research capacity strengthening	Ecuador
P22-00659	Amadou Seck	The GIE West and Centre	GIE WAC Data management course at UCAD	24 000	Not disease specific	Research capacity strengthening	Senegal
P23-00927	Alexandre Delamou	Africa Health Consulting	Translation of IR Toolkit modal content to French	400	Not disease specific	Implementation research; research capacity strengthening	Guinea

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Disease(s)	Research topic(s)	Countries involved
P23-01010	Vijayprasad Gopichandran	Individual account	Revising module on: Ethical considerations in implementation research	14 500	Not disease specific	Implementation research; research capacity strengthening	India
P23-01024	Pascal Launois	Individual account	RCS Consultancy - Launois	18 000	Not disease specific	Research capacity strengthening	Switzerland
P23-01048	Paul Kazyoba	National Institute for Medical Research - NIMR	Strengthening of the health information system to adequately capture snakebite envenoming data from communities and health facilities	24 741	Other	Research capacity strengthening	United Republic of Tanzania
P23-01056	A dugna ABERA	Ethiopian Public Health Institute	Hosting of SORT IT module 4: Operational Research and effective research communication	24 981	Neglected tropical diseases	Research capacity strengthening	Ethiopia
P23-01063	Emmanuel Asampong	University of Ghana	Burden and integration of female genital schistosomiasis interventions with HIV services	24 959	Schistosomiasis	Implementation research; research capacity strengthening	Ghana
P23-01067	Hayk Datvyan	Tuberkulozi Hetazotutyunneri Yev Kankhargelman Kentron	Ethiopia: Providing technical support for hybrid implementation of module 4 of the Ethiopia national NTDs course	1 200	Neglected tropical diseases	Implementation research; research capacity strengthening	Ethiopia
P23-01068	Yoliswa Sthokozile Msomi	University of Cape Town	TDR Clinical Research Leadership (CRL) Programme	2 000	Not disease specific	Research capacity strengthening	South Africa
P23-01069	Eulambius Mlugu	Muhimbili University	TDR Clinical Research Leadership (CRL) Programme	5 000	Not disease specific	Research capacity strengthening	South Africa; United Republic of Tanzania
P23-01072	Mamuye Hadis	Ethiopian Public Health Institute	Ethiopia : Providing senior knowledge management expertise for implementing the Structured Operational Research and Training Initiative SORT IT on NTDs	3 500	Neglected tropical diseases	Research capacity strengthening	Ethiopia
P23-01073	Ebrima Kanteh	Medical Research Council (MRC) Unit The Gambia	TDR Clinical Research Leadership (CRL) Programme	5 000	Not disease specific	Research capacity strengthening	The Gambia
P23-01074	Jamie Guth	Global Health Connections LLC	Ethiopia : Providing senior knowledge management expertise for implementing the Structured Operational Research and Training Initiative SORT IT on NTDs	3 500	Neglected tropical diseases	Research capacity strengthening	Ethiopia
P23-01075	Enbiale Yeshanehe Wendemagegn	Individual account	Ethiopia : Providing senior knowledge management expertise for implementing the Structured Operational Research and Training Initiative SORT IT on NTDs	3 500	Neglected tropical diseases	Research capacity strengthening	Ethiopia
P23-01076	Rhona Mijumbo-Deve	Makerere University	Ethiopia : Providing senior knowledge management expertise for implementing the Structured Operational Research and Training Initiative SORT IT on NTDs	3 500	Neglected tropical diseases	Research capacity strengthening	Ethiopia

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Disease(s)	Research topic(s)	Countries involved
P23-01077	Andrew R. C. Ramsay	Individual account	Ethiopia : Providing senior knowledge management expertise for implementing the Structured Operational Research and Training Initiative SORT IT on NTDs	3 500	Neglected tropical diseases	Research capacity strengthening	Ethiopia
P23-01078	Wilber Sabiti	Individual account	Ethiopia : Providing senior knowledge management expertise for implementing the Structured Operational Research and Training Initiative SORT IT on NTDs	3 500	Neglected tropical diseases	Research capacity strengthening	Ethiopia
P23-01079	Jacklyne Ashubwe-Jalemba	Individual account	Ethiopia : Providing senior knowledge management expertise for implementing the Structured Operational Research and Training Initiative SORT IT on NTDs	3 500	Neglected tropical diseases	Research capacity strengthening	Ethiopia
P23-01081	Maria Magdalene Namaganda	Makerere University	TDR Clinical Research Leadership (CRL) Programme	5 000	Not disease specific	Research capacity strengthening	Uganda; United Kingdom
P23-01082	Fatimata Bintou Sall	University of Thies, Department of Research and Scientific Innovation	TDR Clinical Research Leadership (CRL) Programme	5 000	Not disease specific	Research capacity strengthening	Luxembourg; Senegal
P23-01083	Jack Tsulopka Zawadi	Centre de Recherche en Maladies Tropical (CRMT)	TDR Clinical Research Leadership (CRL) Programme	5 000	Not disease specific	Research capacity strengthening	Democratic Republic of the Congo; Switzerland
P23-01089	Ummi Abdul Kibondo	Ifakara Health Institute	TDR Clinical Research Leadership (CRL) Programme	5 000	Not disease specific	Research capacity strengthening	Switzerland; United Republic of Tanzania
P23-01090	Omar Zuber Hassan	Ifakara Health Institute	TDR Clinical Research Leadership (CRL) Programme	5 000	Not disease specific	Research capacity strengthening	Switzerland; United Republic of Tanzania
P23-01095	Aseffa Getachew Dawit	Dilla University	TDR Clinical Research Leadership (CRL) Programme	5 000	Not disease specific	Research capacity strengthening	Ethiopia; United Kingdom
P23-01102	Anete Mendes Muxlhanga	Manhiça Health Research Center	TDR Clinical Research Leadership (CRL) Programme	10 000	Not disease specific	Research capacity strengthening	Belgium; Mozambique
P23-01133	Ratchanekorn Wutirat	Inis Communication	Design and incorporation of One Health module on the online IR TK	13 277	Not disease specific	Implementation research; research capacity strengthening	United Kingdom
P23-01138	Paul Kazyoba	National Institute for Medical Research - NIMR	Investigating the feasibility of integrating FGS surveillance and intervention with the pediatric praziquantel delivery as a mother and child integrated service model for schistosomiasis control	25 940	Schistosomiasis	Implementation research	United Republic of Tanzania
P23-01143	Antoinette Oglethorpe	Antoinette Oglethorpe Ltd	TDR Mentoring Programme and Train the Trainers	94 751	Not disease specific	Research capacity strengthening	United Kingdom

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Disease(s)	Research topic(s)	Countries involved
P23-01151	Rafdzah Ahmad Zaki	University of Malaya	TDR MOOC Pilot - Malaysia	14 900	Not disease specific	Implementation research; research capacity strengthening	Malaysia
P23-01154	Yodi Mahendradhata	Gadjah Mada University	Capacity strengthening activities related to evidence-to-policy in the WP region.	49 586	Not disease specific	Research for Policy; research capacity strengthening	Indonesia
P23-01159	Esteban G. Baus Carrera	Individual account	To develop 16 additional short videos in English and Spanish to illustrate the value of implementation research	7 200	Not disease specific	Implementation research; research capacity strengthening	Ecuador
P23-01160	Carme Carrion i Ribas	Fundació per a la Universitat Oberta de Catalunya (FUOC)	A cross-sectional study to determine usability and accuracy of the new AI based version of WHO skin NTD mobile Application	19 002	Neglected tropical diseases	Research for Innovation; research capacity strengthening	Spain
P23-01170	Annastasia Kalbarczyk	Individual account	Consultancy	44 000	Not disease specific	Research capacity strengthening	USA

TDR funding in 2023

Contributor	
Core contributors	Amount (US\$)
Belgium	681 044
India	55 000
Japan	50 000
Luxembourg	1 185 037
Malaysia	25 000
Mexico	10 000
Nigeria (1)	200 000
Norway	306 341
Panama	7 000
Spain (2)	161 813
Sweden	1 162 487
Switzerland	1 940 639
Thailand	44 274
United Kingdom of Great Britain and Northern Ireland	3 877 001
World Health Organization	900 000
Miscellaneous	608
Subtotal	10 606 244
Contributors providing project-specific funding	Amount (US\$)
International Development Research Centre	151 172
Luxembourg	413 340
Medicines Development for Global Health	8 495
Robert Koch Institute	272 065
Sweden (Sida)	313 418
United Kingdom Foreign, Commonwealth and Development Office	100 000
United Nations Development Programme	1 144 000
World Health Organization	487 986
Subtotal	2 890 476
Total contributions	13 496 720

1. The contribution from the Government of the Federal Republic of Nigeria for the period 2021 to 2023 was reported in full in the 2022 certified financial statement.
2. The contribution from the Government of Spain is for 2023 only. Contributions received in both 2022 and 2023 will be reported in the 2023 certified financial statement due to the timing of their receipt.

Scientific Working Group summary recommendations list

RTCs supported by TDR including Massive Open Online Course (MOOC) on Implementation Research

The SWG concluded the reports of all the regional training centres were satisfactory.

In order to make a better review forward looking, and considering the content of the interim reports were heterogeneous, the content of reports could be pre-reviewed to make sure to allow more granular reviews. Information concerning context, including contract details, course content details, enrolment and completion rates using a standard definition together with the narrative description of achievements, challenges and lessons learnt, should always be included.

The SWG was encouraged to learn on the plans to update and refresh the course catalogue in line with the new TDR strategy and countries' needs.

Specific considerations and suggestions included the following:

- To increase RTC outreach, the group recommended enhanced use of WHO regional offices.
- An in-depth qualitative review of the courses including interviews to participants and to the faculty and staff organizing and delivering the courses would provide valuable information to take the training to the next level and adapt to the new TDR strategy. Potentially the principal investigators could present their perspective at future working groups.
- The SWG recommends more cross learning activities across the centres to capture the lessons learnt and best practices.
- The SWG considered the satellite institutions are a good idea but would benefit from more structure and a clear definition of their value in the next cycle. The SWG can help identify existing networks in the regions related to the TDR objectives to make synergies, such as the One Health network in Asia.
- The SWG recommends a strategic approach to balance equity and excellence: differentiated funding to existing RTC as well as funding new ones to innovate and expand the reach. Strong RTC could focus on expanding their experience and training to satellite institutions while new ones could benefit from direct funding and support. An in-depth review of their success and challenges of the RTC could guide this.

MOOCS

In order to institutionalize IR, the SWG recommends to:

- Present TDR IR tools in related global and regional events.
- Establish an open repository of IR training videos, case studies, amongst others.
- The materials and contents of the MOOC developed 5 years ago may need to be reviewed to adapt to national, regional needs and to TDR new strategy. For example, including a course on climate change and its relation to health.
- Consider new partnerships as much of the data for One Health and Climate change is beyond the health sector.
- To consider possibilities to link to SORT-IT type of training following MOOCs, through liaison with academic institutions to conduct implementation research.

Postgraduate training scheme

Specific considerations and suggestions included the following:

The SWG concluded the reports of all the universities were satisfactory. The SWG suggests to:

- Monitor graduation rates in a standardised manner, in addition to recruitment rates.
- Leverage existing conferences to bring the cohorts together, to support the students in advancing their careers, to disseminate across networks, and to link them to home institutions.
- Ensure cross learning between institutions.
- A proactive longer term tracking of the candidates' career to measure impact and use it to promote the work done.
- Support a TDR alumni network and create communities of practices leveraging existing efforts. For example, the global TDR network and IR connect in Gadjah Mada.
- Explore the value of one vs. two year programs.
- To support candidates from countries where the situation for data collection in home country may be challenging (currently exemplified by some students based in the WHO Eastern Mediterranean Region):
 - Ensure that the hosting institution is supporting the student to identify an adequate supervisor as needed in the home country and with the grad course university.
 - and/or focus on candidates that have affiliations to home institutions.
 - Universities should set criteria for supervisors and/or mentors from other institutions that can provide complementary research and career advice, including setting-specific knowledge.
- Suggest to consider development and inclusion of training on career path, leadership, communication and advocacy, internship opportunities and linkage to SORT IT.

Clinical Research and Development Fellowship scheme

Specific considerations and suggestions included the following:

- The SWG suggested to explore accreditation opportunities with academic regional institutions that could combine degrees with the Clinical Research Leadership programme.
- To increase reach and number of hosting institutions from LMICs, the SWG recommends to:
 - Leverage efforts of Africa CDC on regional vaccine manufacturing.
 - Engaging with DCVMN (Developing Countries Vaccine Manufacturers Network) International.

Structured Operational Research and Training Initiative (SORT IT)

Specific considerations and suggestions included the following:

Considering the success of SORT IT and its unique selling point for TDR, the SWG suggests to:

- Reframe the utility of the program.
- Leverage the direct impact of research to policy of SORT IT, with funders
- Emphasize the opportunity to align to TDR strategy as well its value in the integration of multiple health care interventions.
- Help to craft the research agenda for the Global Fund and show how OR can accelerate control of TB, HIV, malaria.

- Considering the Global Fund and SORT IT share some of the funders, the direct utility of the results by programs should be better emphasized, in addition to the publications.
- Feature OR/IR in supplements of established journals, supported by TDR
- Linkages on the thematic trajectory, integration, reaching the unreached and future research questions.

Access and Delivery Partnership (ADP)

Recognizing the Access and Delivery Program involves the RCS and the Research for Implementation (IMP) group and that the SWG reviewed the RCS side, the discussion also touched upon format of presenting and discussing the ADP initiative.

Specific considerations and suggestions included the following:

- The group supports exploring the potential of a multiyear approach instead of annual grants in order to ensure continuity of capacity strengthening.
- The four institutions (WHO/UNDP/PATH/TDR) involved in the programme support individual projects in a separate manner which misses the opportunity of greater impact. The SWG suggests a clear articulation of the institutions' contribution to the value chain and the country ownership embedded in that. As well as to consider the integration of projects across the four sub-aims, leveraging successful examples such as that of paediatric praziquantel in the United Republic of Tanzania.
- As there seems to be a disconnect between the outputs and the aims of the program, it would be useful clearly articulate the benefit and impact to the program's aims and to TDR goals.
- Whilst it is recognized that the funder sets the focus countries, TDR should advocate to consider public health needs, for example measured by disease burden, in future selection.

CROSS-CUTTING SUGGESTIONS TO SEVERAL ACTIVITIES:

- Regarding the importance of accessing high quality data for OR/IR, TDR could link with WHO programs epidemiological review which conduct in depth assessments of surveillance systems and routine data.
- Theses and projects from RTC and Postgraduate training could focus on in depth analyses related to the challenges on the uptake of IR in programs.
- Ensure hybrid teaching (online and face to face) activities are continuously used.

DISCUSSION AND SUGGESTIONS RELATED TO THE SWG STRUCTURE AND MEMBERS:

It is useful to have joint strategic discussions of RCS and IMP given overlap and interdependency, however there is still a need for dedicated support for RCS and a value in smaller group discussion.

- Consider starting and finishing the meeting with a joint session of both groups.
- Flexibility to have ad hoc task groups from both RCS and IMP groups on cross cutting or particular issues.
- Update the skills and expertise of the SWG related to the new strategic pillars, to see which are the gaps and consider adding columns to the table that summarise the skills of the members.
- Consider including representation of early career researchers in the SWG, for example leveraging on TDR alumni networks or other alumni networks or associations.

Annex 1. Publications list

ER 2.1.1.1: Strategic support to WHO regional activities: The regional training centres and IR training tools

1. Penkunas, M. J., Ross, B., Echavarria, M. I., Scott, C. P., Baron, L. F., Rebai, W. K., Bouguerra, H., Thorson, A., Vahedi, M. and Launois, P. 2023. *Professional outcomes and barriers experienced by participants of an implementation research massive online open course: Descriptive results from French, Spanish and English speaking learners in low- and middle-income settings*. [Manuscript submitted for publication].
2. Penkunas, M. J., Ross, B., Scott, C. P., Baron, L. F., Rebai, W. K., Bouguerra, H., Echavarria, M. I., Thorson, A. and Launois, P. 2023. *Barriers to applying knowledge gained through an implementation research massive open online course: An exploratory qualitative study*. [Manuscript in preparation].
3. Dagenais, C., Ridde, V., Proulx, M. and Mc Sween-Cadieux, E. (2023). *Guide to Support the Development of a Community of Researchers, Practitioners, and Decision-Makers Competent to Conduct Scoping Reviews*. TDR.
4. Dagenais, C., Ridde, V., Proulx, M. and McSween-Cadieux, E. (2023). *Guide pour Soutenir le Développement d'Une Communauté de Chercheurs, Praticiens et Décideurs Compétents pour Réaliser des Revues de Portée (Scoping Reviews)*. TDR.

ER 2.1.2: Postgraduate training grants

5. Abey, Solomon Lulie, Mersha Teka, Abebe Belete Bitew, Wassie Molla, Mebrat Ejo, Gashaw Getaneh Dagnaw, Takele Adugna, et al. "Detection and Antibigram Profile of Diarrheagenic Escherichia Coli Isolated from Two Abattoir Settings in Northwest Ethiopia: A One Health Perspective," 2023.
6. Adjei, Michael Rockson, Kwame Amponsa-Achiano, Rafiq Okine, Peter Ofori Tweneboah, Emmanuel Tettey Sally, John Frederick Dadzie, Fred Osei-Sarpong, et al. "Post Introduction Evaluation of the Malaria Vaccine Implementation Programme in Ghana, 2021." *BMC Public Health* 23, no. 1 (2023): 586. <https://doi.org/10.1186/s12889-023-15481-6>.
7. Afreh, O K, P Angwaawie, E J K Attivor, L A Boateng, K Brackstone, M G Head, A K Manyeh, and G A A Vidzro. "Examining Confidence and Hesitancy towards COVID-19 Vaccines: A Cross-Sectional Survey Using in-Person Data Collection in Rural Ghana." *Vaccine* 41, no. 13 (2023): 2113–19. <https://doi.org/10.1016/j.vaccine.2023.02.024>.
8. Aglanun, Leslie Mawuli, John Humphrey Amuasi, Evie Prokesh, Alexis Beyuo, Chrisantus Danaah Dari, Sofanne J Ravensbergen, Melvin Katey Agbogbaley, et al. "Community Members and Healthcare Workers' Priorities for the Control and Prevention of Snakebite Envenoming in Ghana." *PLoS Negl. Trop. Dis.* 17, no. 7 (2023). <https://doi.org/10.1371/journal.pntd.0011504>.
9. Akuffo, Richard Adjei, Carmen Sanchez, Ivy Amanor, Jennifer Seyram Amedior, Nana Konama Kotey, Francis Anto, Thomas Azurago, et al. "Endemic Infectious Cutaneous Ulcers Syndrome in the Oti Region of Ghana: Study of Cutaneous Leishmaniasis, Yaws and Haemophilus Ducreyi Cutaneous Ulcers." *PLoS One* 18, no. 9 September (2023). <https://doi.org/10.1371/journal.pone.0292034>.
10. Al-Hajj, Samar, Loyal Ghamlouche, Khawla Nasser Aldeen, and Mazen El Sayed. "Beirut Blast: The Experiences of Acute Care Hospitals." *Disaster Med. Public Health Prep.* 17, no. 9 (2023). <https://doi.org/10.1017/dmp.2022.288>.

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