
Annual Report 2022

Research capacity strengthening

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List of abbreviations

ADP	Access and Delivery Partnership (UNDP)
AFR	WHO African Region
AMR	WHO Region of the Americas
AUB	Faculty of Health Sciences, American University of Beirut
CIDEIM	Centro Internacional de Entrenamiento e Investigaciones Medicas, Colombia
CRDF	Clinical Research and Development Fellowship
CRL	Clinical Research Leadership
DF	designated funding
DNDi	Drugs for Neglected Diseases initiative
EDCTP	European and Developing Countries Clinical Trials Partnership
EFPIA	European Federation of Pharmaceutical Industries and Associations
EMR	WHO Eastern Mediterranean Region
EPPE	effective project planning and evaluation
ER	Expected Result
EUR	WHO European Region
EVI	European Vaccine Initiative
Gates Foundation	Bill & Melinda Gates Foundation
GCLP	good clinical laboratory practice
GCP	good clinical practice
GFATM	Global Fund to fight AIDS, Tuberculosis and Malaria
GHRP	good health research practice
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
IDDO/WWARN	Infectious Diseases Data Observatory. WorldWide Antimalarial Resistance Network
IR	implementation research
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
M&E	monitoring and evaluation
MoH	Ministry of Health
MOOC	Massive Open Online Course
MPH	Master's in Public Health
NTD	WHO Department of Control of Neglected Tropical Diseases
NTDs	neglected tropical diseases

OR	operational research
R&D	research and development
RCS	TDR Research Capacity Strengthening Unit
RTC	Regional Training Centre
RTC/AFR	Regional training centre supported by TDR in the WHO African Region
RTC/AMR	Regional training centre supported by TDR in the WHO Region of the Americas
RTC/EMR	Regional training centre supported by TDR in the WHO Eastern Mediterranean Region
RTC/EUR	Regional training centre supported by TDR in the WHO European Region
RTC/SEAR	Regional training centre supported by TDR in the WHO South-East Asia Region
RTC/WPR	Regional training centre supported by TDR in the WHO Western Pacific Region
SDGs	Sustainable Development Goals
SEAR	WHO South-East Asian Region
SORT IT	Structured Operational Research and Training Initiative
STPHI	Swiss Tropical and Public Health Institute
TDR	UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases
ToT	training-of-trainers
TPO	training partner organization
UCAD	Université Cheikh Anta Diop, Dakar, Senegal
UD	undesignated funding
UHC	universal health coverage
UNDP	United Nations Development Programme
WPR	WHO Western Pacific Region

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 support universal health coverage (UHC). Within the context of the TDR vision – *The health and well-being of people burdened by infectious diseases of poverty is improved through research and innovation*. The overarching RCS goal is 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). In strengthening this capacity, RCS programmes have also built research capacity and equipped health workers with transferable core competencies and skill sets which have contributed to building health system resilience during the COVID-19 pandemic.

Objectives

RCS objectives refer to the capacity to produce evidence that has the potential for near-term implications for public health practice and policy:

- *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, career development fellowships, and the development of Regional Training Centres (RTCs).*

These objectives are aligned with the TDR Strategy 2018–2023, which contributes to a wide range of 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.*

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 RCS efforts is on strengthening the capacity of researchers in LMICs in implementation research (IR). This research, therefore, underpins the key areas of action to achieve WHO’s GPW13 “triple billion” goals:

- One billion more people benefitting from universal health coverage;
- One billion more people better protected from health emergencies; and
- One billion more people enjoying better health and well-being.

Key achievements in strategic priorities in 2022

In 2022, RCS maintained efforts to support the development and implementation of **online training courses**, including a Master’s degree on IR. This included:

- a MOOC on IR was disseminated in all six UN languages;
- the new module on gender and intersectionality was developed for the IR Toolkit;
- 426 Master’s students were trained in IR since 2015 and for the second phase of the training programme, all eight universities in LMICs became operational (2022–2026); and
- the University of Bamako was selected as the second French-speaking university.

Advanced training in clinical product development (Clinical Research and Development Fellowship (CRDF))

- 18 fellows were selected to be placed at nine training partner organizations (TPOs)
- the Clinical Research Leadership (CRL) programme was approved by the Bill and Melinda Gates Foundation (2022–2028)

Structured capacity building in IR through the Access and Development Partnership (ADP) project

- Three countries incorporated IR in their disease control programmes for developing national neglected tropical diseases (NCDs) control plans: Bhutan; Indonesia and the United Republic of Tanzania
- Two countries were funded for IR demonstration projects and mentorship guidance plan: Ghana and Malawi

Strengthening Operational Research (OR) capacity in programmes supported by the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM)

Two SORT IT courses were initiated in Guinea and Kenya

Summary progress description for 2022

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.

Table 1. Research Capacity Strengthening workplan overall progress

<i>Expected Results – Research Capacity Strengthening</i>	
<i>Expected results and deliverables</i>	<i>Indicators and targets</i>
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 implementation research; 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 are ready to implement at least two training courses in IR or GHRPs - at least two different short training courses on IR or GHRPs implemented in each RTC <p><i>Progress made:</i></p> <ul style="list-style-type: none"> ■ All RTCs implemented at least two short training courses in IR (MOOC on IR; Basic Principles in IR; Ethics in IR; or TDR Toolkit on IR) ■ One satellite institution per RTC ready to implement at least two training courses in IR or GHRPs, except for the Malaysian Global Health Consortium, Malaysia ■ By 2022, six out of the seven TDR-supported RTCs have been established

Expected Results – Research Capacity Strengthening

Expected results and deliverables	Indicators and targets
<p>2.1.2 Targeted research training grants in low- and middle-income countries:</p> <p>i) early career trainees completed their degree in their home country or within the region;</p> <p>ii) a global network (intra and inter-regional) of TDR-supported implementation researchers developed.</p>	<p>By 2023, an additional 60 Master's trainees are enrolled or have completed their degree (160 trainees for the US\$ 50 million budget scenario)</p> <p>Progress made:</p> <ul style="list-style-type: none"> By end 2022: an additional 152 Master's trainees enrolled in MPHs across the participating universities By 2022, the selection of the eight universities participating in the second phase of TDR Postgraduate Training Scheme is completed By 2022, the University of Bamako selected as the second French-speaking university and progress is ongoing for selection of students for placement in early 2023 In 2022, development of an online IR curriculum for a Master's in Public Health (MPH) significantly progressed for finalization by mid-2023 In 2022, IR ethics training course was used across the participating universities In 2022, planning for the IR leadership programme was ongoing, to be piloted in 2023 By end 2022: 132 additional Master's trainees enrolled in MPHs across the participating universities
<p>2.1.4 Advanced training in clinical product development: i) highly skilled scientists in R&D in low- and middle-income countries; ii) R&D skills gained during training implemented in the home institution; iii) mapping training programmes which address clinical research team core competencies.</p>	<p>By 2021, 30 new fellows enrolled or completed their training</p> <p>Progress made:</p> <ul style="list-style-type: none"> 18 fellows selected in 2021 placed in the 2021–2022 CRL programme was approved by the Gates Foundation
<p>2.1.6 Structured capacity building in IR (renewal of UNDP Access and Delivery Partnership): i) ADP focus countries identify and address factors that impede the effective access and delivery of health technologies; ii) Implementation research projects (IR) completed.</p>	<p>By 2023:</p> <ul style="list-style-type: none"> Three to five ADP focus countries incorporate IR into their disease control implementation plans Two to three ADP focus countries conduct IR projects and findings incorporated into control programmes <p>Progress made:</p> <ul style="list-style-type: none"> In 2022, Bhutan initiated IR gap analysis for evaluating preparedness to adopt the WHO NTD Roadmap 2021–2030 and the development of its national NTDs action plan In 2022, Indonesia developed a national strategy for IR to support the prevention and control of NTDs 2022–2026

Expected Results – Research Capacity Strengthening

Expected results and deliverables	Indicators and targets
	<ul style="list-style-type: none"> In 2022, Ghana and Malawi developed IR training and mentorship guidance which is being pilot tested using IR-funded demonstration projects In 2022, the United Republic of Tanzania aligned its NTDs control programme master plan with the WHO NTD Roadmap 2021–2030 as part of the Health Sector Strategic Plan V (2021–2026)
2.1.7 Strengthening operational research capacity in Global Fund supported programmes: i) programme teams trained to incorporate OR in GFATM applications; ii) OR projects completed.	By 2023: <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 are published <p><i>Progress made:</i></p> <ul style="list-style-type: none"> In 2022, two national SORT IT alumni were identified to provide technical support for the incorporation of OR in the next GFATM applications in Eswatini and the United Republic of Tanzania In 2022, two SORT IT courses were initiated in Guinea and Kenya

Progress description in 2022 and plans for 2023

Ensuring that all those in need of health products can gain access to them requires not only clinical research and development, but also strengthened research capacity in LMICs, to better understand how to deliver them effectively, efficiently and equitably. TDR undertakes a range of explicit RCS activities which contribute to increasing LMIC leadership on IR on infectious diseases of poverty. This report presents on the four ERs in Table 1 under the RCS area of 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. There is also a summary of progress on the RCS contribution to ER 1.1.7, the Structured Operational Research and Training Initiative (SORT IT), which is led by TDR's IR team. In 2022, two countries, Eswatini and the United Republic of Tanzania, received technical support for the incorporation of an OR component in their next GFATM applications.

ER 2.1.1.1: Strategic support to WHO regional activities: The Regional Training Centres

TDR supports a network of Regional Training Centres which have been selected on a competitive basis to conduct and disseminate training courses relevant to the TDR Strategy. The training courses include those relevant to GHRPs and those relevant to IR. The training courses relevant to good health practice are: effective project planning and evaluation (EPPE), good clinical practice (GCP), good clinical laboratory practice (GCLP) and good health research practice (GHRP). The training courses and tools

relevant to IR are the Massive Open Online Course (MOOC), Basic Principles in IR (PIR), the TDR IR Toolkit, and the Ethics of IR.

Regionalization of short courses using training of trainers (ToT) methodology and training workshops enables RCS to work more closely with the end-users and become more relevant to regional needs, empower centres based in the regions to serve as training hubs, and utilize existing expertise in disease-endemic countries.

The seven RTCs supported by TDR (one by WHO region, except for AFR, where there are two RTCs) are represented in Fig. 1 below:

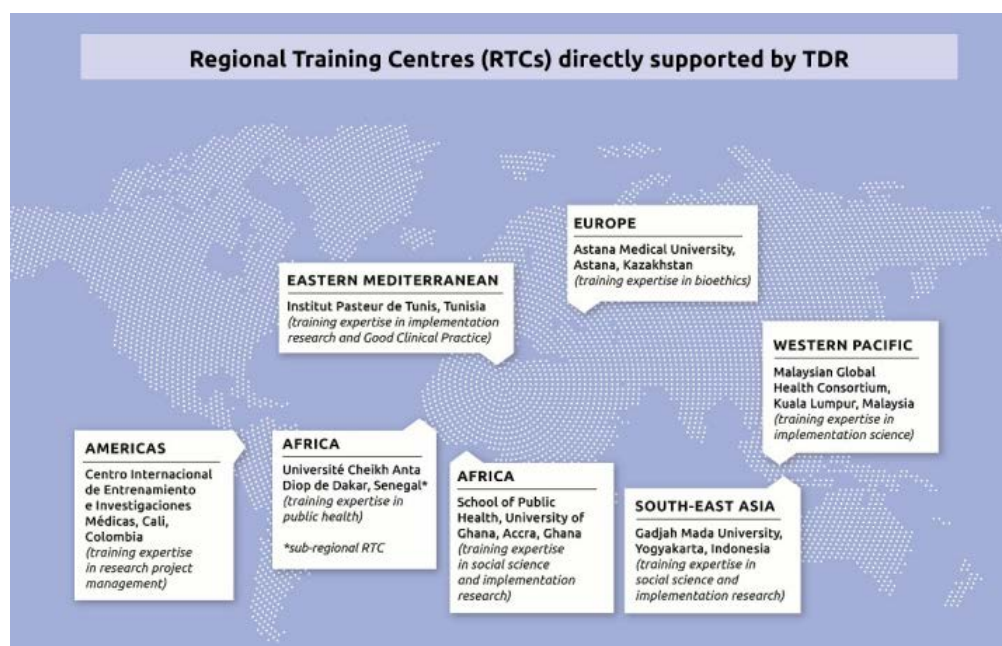


Fig. 1. Regional Training Centres directly supported by TDR

The main purpose and target audience for each short training course are depicted in Fig. 2 below.

IMPLEMENTATION RESEARCH (IR) TRAINING TOOLS							
TOOL	MASSIVE OPEN ONLINE COURSE (MOOC) ON IR	BASIC PRINCIPLES IN IR	ETHICS IN IR	GOOD HEALTH RESEARCH PRACTICE	IR TOOLKIT	EFFECTIVE PROJECT PLANNING AND EVALUATION	GUIDANCE ON PUBLISHING IR
MAIN PURPOSE	To provide an introduction to all concepts and principles in IR	To build upon skills learnt in the MOOC	To provide an introduction to all concepts and principles in IR project	To apply the concepts of Good Clinical Practice in non-clinical research	To develop a strong IR project proposal and a plan for implementing the project	To improve skills in project management	To build skills to publish IR results
TARGET AUDIENCE	Researchers Implementers Public health officers	Researchers Implementers Public health officers	Researchers Ethics review committees	Researchers	Researchers Implementers Public health officers	Researchers	Researchers Implementers Public health officers

Fig. 2. Implementation research training tools

Progress in 2022

Training courses relevant to good health practice

The RTCs have progressively integrated a panel of skills-building courses for bioethics, good practices, project planning, management and evaluation of results within their training programmes. The RTCs have conducted and disseminated the following training courses: skills-building courses (SBCs) and ToT in EPPE, GCP and GCLP, and courses on research ethics and GHRPs, have been developed by the RTC network to respond to global needs, i.e. improve the quality of research involving humans (from basic science to IR), by applying the concepts of GCP. The EPPE and GHRP training courses are available in English, French and Spanish. The GCP, GCLP and research ethics are only available in English. In addition, some RTCs leveraged funds to organize other training courses to respond to regional needs. These include courses on biosafety, blended biostatistics, data analysis and data management for clinical studies.

Table 2. Number (% women) of participants trained at RTCs in good research practice in 2022

Topics	AFR	AMR	EMR	EUR	SEAR	Total
EPPE						
SBC		52 (65%)				52 (65%)
ToT		5 (80%)				5 (80%)
GCP/GCLP		26 (73%)	25 (96%)	68 (63%)	107 (71%)	226 (72%)
GHRP		12 (83%)	22 (82%)		59 (54%)	93 (64%)
Research ethics				47 (66%)		47 (66%)
Total						423 (68%)

The main goal of the EPPE course is to “*strengthen capacities in the organization and management of research projects so as to achieve effective implementation and successful collaboration, and in this way increase competitiveness in accessing available funding*”. During the course, participants go step by step through their own research project, defining and clarifying its goal, objectives and indicators, as well as carefully establishing a complete project development and monitoring plan. This course is now institutionalized in four RTCs: AMR, AFR, EMR and EUR.

An important RCS partner, the Centro Internacional de Entrenamiento e Investigaciones Medicas (CIDEIM) in Colombia hosts an RTC for Latin America and the Caribbean (LAC). CIDEIM is building a project management capacity for health research into its network in 2022. In Colombia, the EPPE course was institutionalized at the Universidad Icesi and the Universidad del Valle (both in Cali); and at the Universidad de Antioquia (Medellín). Other partners in the network are the Instituto Nacional de Medicina, Puerto Iguazu, Argentina; the Universidad del Valle in Guatemala; and at the University of the West Indies, Kingston, Jamaica.

After many years of successful experiences and many different research teams trained, there is still a strong need for expanding the EPPE course to other types of research, beyond biomedical research, such as a more public health-oriented research. Thus, the EPPE curriculum of the current skill building

course has been adapted for blended training, using a local example of IR project in Colombia, the “Community-engaged health implementation research project”. The course that has been developed contains five modules and is currently being piloted at CIDEIM.

Training courses relevant to implementation research

The RTCs have also been involved in IR training courses aimed at improving access to, and delivery of, public health tools, strategies and interventions. These include a MOOC on IR, a short course on the principles of IR (PIR) which covers basic methodologies, as well as more advanced training courses, such as the IR Toolkit and Ethics in IR.

Massive Open Online Course (MOOC)

The goal of the MOOC is to build capacity in how to identify the challenges of various health settings, assess the appropriateness of existing strategies and develop new interventions and strategies by working with communities and stakeholders. The MOOC is now available in all six UN languages. In 2022, MOOC sessions in Arabic and Chinese were piloted with 329 and 193 participants, respectively. All MOOC sessions have a completion rate of 18–25%, except the MOOC session in Spanish organized by the RTC in Latin America, which has a completion rate of 6%. Strategies to improve completion rates should be implemented in 2023.

Responding to gaps identified by MOOC participants so far, RCS is currently developing additional modules on: i) the use of qualitative, quantitative and mixed methods in IR; ii) community engagement; and iii) illustrative examples of IR in the control of chagas disease, leishmaniasis, trachoma and leprosy. Recordings of the sessions were postponed due to COVID-19-related travel restrictions and political instability in some countries. Sessions from Colombia and Ethiopia were finalized in the last quarter of 2022. The module on VL elimination in Nepal needs development of a complete script before being recorded. A module on improving implementers knowledge is also being finalized. With all these modules, RCS is willing to offer a second MOOC on IR with more illustrations of successful IR projects.

A module on the control of dengue in the Giradot province in Colombia, which wraps up all the IR concepts and is illustrated with a real-life example, has been finalized and will be incorporated as a specific module in the next Spanish MOOC session in 2023.

An evaluation of the first two sessions of the IR MOOC in English demonstrated that the target audience was reached, and that it is a valuable tool for communicating IR concepts to learners, engaging a diverse set of participants, and catalysing professional change at the individual and organizational levels. RCS decided to evaluate the French and Spanish MOOC sessions and the more recent cohorts in English sessions in 2020 and 2021. This evaluation will examine how participants have used the skills they gained from the course in their daily professional life, and identify areas within the MOOC that would benefit from further development. The analysis will follow Kirkpatrick’s four-level model of evaluation to assess participants’ reaction to the course, learning obtained, change in professional behaviour, and professional results achieved after the course. E-mails were sent (5,867) and the global response rate is 24% – with a response rate of 30%, 29% and 14% for the sessions in French, English and Spanish, respectively. Results should be obtained in 2023.

A MOOC on incorporating an intersectionality gender perspective in IR has been piloted in June-July 2022. The objective was to design IR projects with an intersectional gender lens and develop robust IR projects that take into account gender dimensions, and other intersecting axes of inequality. Participants (450) who attended this training had a completion rate of 25%. Due to positive participant feedback, this MOOC will be offered in October 2023 by the RTC/AFR, in parallel with a session of the RCS MOOC on IR.

Basic principles in IR

In tandem with RCS's current focus on IR, the RTC/AFR developed a short course on the Principles of Implementation Research (PIR). The training is currently being offered as a regular fee-paying short course at the School of Public Health in Ghana. In this regard, two courses have been proposed to the School Management Committee at the University of Ghana (a bachelors' course on the Basics of Implementation Research, and a PhD course on Advanced Implementation Research). Therefore, RCS decided to replace the face-to-face training with an online course, which was developed through a university virtual platform by the School of Public Health (SPH) in Ghana. In addition, the SPH ran an online version of the PIR for 25 participants in collaboration with the Kenyatta University School of Public Health in July 2022. The PIR training course is also now strategically implemented in other RTCs, such as through CIDEIM in Latin America. The PIR has also been translated into French for distribution in the region and has been institutionalized by the RTC covering French-speaking countries in West Africa, the Université Cheikh Anta Diop de Dakar (UCAD), Senegal.

TDR IR Toolkit

The French version of the TDR Toolkit will be totally institutionalized with the help of the EMR RTC and UCAD. The self-assessment tool for the online toolkit was updated to incorporate IR core competencies and is undergoing testing. The intersectional gender lens module of the toolkit was finalized and launched in 2022 for wider dissemination. The French translation is ongoing and will be finalized in 2023 (<https://adphealth.org/irtoolkit/intersectional-gender-lens>).

Ethics in IR

Two virtual IR courses on ethics were conducted across the RTCs and universities in the Postgraduate Training Scheme. The course participants included members of ethics review committees and faculties of MPH programmes (see below ER: 2.1.2).

Monitoring and evaluation for the capacity-building activities training course

An online M&E course was introduced in two RTCs in August–September 2022. It was based on the revised version of the M&E training course developed in partnership with the Barcelona Global Health Institute (ISGlobal) for the CRDF programme, i.e. **RTC/SEAR** (Gadja Mada University, Indonesia) and **RTC/AFR** (School of Public Health, University of Ghana, Ghana). Seven participants from each RTC attended this course and developed an M&E framework for capacity-building activities supported by RCS in each RTC, with the objective to improve the M&E framework developed in 2020. Table 3 gives a breakdown of statistics on this.

Table 3. Number (% women) of participants trained at RTCs on IR training courses in 2022

Topic	AFR	AFR/FSC*	AMR	EMR	EUR	SEAR	Chinese	Total
MOOC (registered)	475 (44%) (N/A)	706 (29%)	789 (67%)	1884** (57%)	28 (71%)	626 (53)	193 (NA)	4,701 (53%)*
PIR	28 (36%)	2 (50%)						30 (40%)
Ethics in IR			5 (N/A)			12 (N/A)		24 (NA)
TDR tool kit in IR		10 (50%)				8 (40%)		14 (57%)
Total								4,769 (53%)*

* RTC in French-speaking Africa

** two MOOC sessions: One in Arabic (329 participants – 68% women) and one in English (1555 participants – 55% of women)

*** % of women in all MOOC sessions, except the MOOC in Chinese

MOOC grants for IR: pilot schemes

The MOOC needs to be further enhanced by adopting a learning-by-doing approach. TDR proposed that a customized mentorship be given to a selected group of trainees that would enable trainees to rapidly apply the skills developed during the didactic components of training. This would require incorporating a grant to complete an IR project for trainees who have managed to create high-quality letters of intent for an IR project using TDR training tools (e.g. the TDR toolkit on IR). Two RTCs agreed to pilot this new scheme and in 2022, five MOOC grants on infectious diseases of poverty were implemented by the Gadjah Mada University (GMU) in Indonesia and 10 grants with UCAD. If the scheme is successful, RCS would like to link the MOOC grant scheme with each MOOC session.

Remaining risks and challenges

The successful introduction of new courses requires assurance of the quality of each course content, particularly in the context of developing online training courses. There is a growing spectrum of training tools and modalities and specialized skill sets needed to develop these online training courses. RCS has to support this transition through complementary support to RTC staff on how best to use the recently developed tools.

Operationally, taking ownership involves assurance of training capacity with the availability of an adequate number of trainers. Thus, regional development of research capacity and dissemination requires personnel who can be fully dedicated to RTC activities. Support for human resources is critical to the continued expansion of capacity-strengthening activities in regional institutions.

Contributions towards TDR key performance indicators

Partnerships and collaborations:

The list of RTCs is given in Figure 1.

Leverage created by this project:

To be harmonized with leverage in eTDR.

Gender aspects and vulnerable populations:

The percentage of women participating in good research practice and IR training courses is given in Table 2. Of the seven RTCs, four women are heading the RTC activities. RCS is supporting the development of a MOOC and a module of the TDR toolkit on IR on gender and intersectionality.

Training:

Tables 2 and 3 show the number of participants in the different short training courses.

Strengthened institutions and/or networks:

In addition to institutionalization in each RTC, an objective of the RTC initiative is to disseminate short training courses in satellite institutions, within the country and at regional level. Thus, in addition to the countries in which RTCs are located (Colombia, Ghana, Indonesia, Kazakhstan, Senegal and Tunisia), short training courses in GHRP and IR have been institutionalized in the regions. **RTC/AFR:** Kenya, Mozambique and Nigeria; and for French-speaking West Africa: Benin, Burkina Faso, Côte d'Ivoire, Guinea, Mali, Mauritania and Togo for RTC-UCAD. **RTC/AMR:** Bolivia, Ecuador, Guatemala, Honduras, Jamaica and Peru. **RTC/EMR:** Lebanon. **RTC/EUR:** Armenia, Azerbaijan, Belarus, Georgia, Kyrgyzstan, Tajikistan, Uzbekistan, Ukraine and the Kazan state of Russia. **RTC/SEAR:** India, Myanmar and Nepal.

Publications:

Rakhra A, Hooley C, Fort M, Weber MB, Price L, Nguyen HL, Ramirez M, Muula AS, Hosseinipour M, Apusiga K, Davila-Roman V, Gyamfi J, Adjei KGA, Andesia J, Fitzpatrick A, Launois P, Baumann AA. The WHO-TDR Dissemination and Implementation Massive Open Online Course (MOOC): Evaluation and Lessons Learned from Eight Low-and Middle-Income Countries. *Res Sq* [Preprint]. 2022 Mar 29;rs.3.rs-1455034. doi: 10.21203/rs.3.rs-1455034/v1. PMID: 35411340; PMCID: PMC8996629. Ross B, Penkunas MJ, Maher D, Certain E, Launois P. Evaluating results of the implementation research MOOC using Kirkpatrick's four-level model: a cross-sectional mixed methods study. *BMJ Open*. 2022 May 3;12(5):e054719. doi: 10.1136/bmjopen-2021-054719. PMID

Related news:

[Eliminating schistosomiasis in the Gambia \(who.int\)](https://www.who.int/news/eliminating-schistosomiasis-in-the-gambia)

Plans for 2023

RCS will work on wider dissemination of the courses in all WHO regions. Firstly, the RTCs will continue to institutionalize training courses on GHRPs and IR in their regions, through the identified satellite institutions. Secondly, the participation of women will be encouraged in research trainings and tracked by monitoring gender-disaggregated data.

RCS will maintain its efforts to support the development and implementation of online training courses in each RTC. Particularly, in the development and implementation of new MOOCs aimed at strengthening expertise of practitioners to: i) facilitate between implementation researchers and users of IR; and ii) help to translate evidence into policy. RCS will continue to support pilot demonstration project grants to each MOOC session.

ER 2.1.2: Targeted research training grants in low- and middle-income countries: Postgraduate Training Grants

As part of TDR's efforts to increase LMIC capacity 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 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. Since 2015, the Postgraduate Training Scheme is comprised of a network of 10 universities in disease-endemic regions which have been selected on an open competition basis:

1. James P. Grant School of Public Health (JPGSPH), BRAC University, Dhaka, Bangladesh
2. National School of Public Health, 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, Jaipur, India
5. Faculty of Medicine, Universitas Gadjah Mada (GMU), Yogyakarta, Indonesia
6. Faculty of Health Sciences, American University of Beirut, 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 (UCAD), 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 **426** Master's fellowships (Table 4) and eight PhD fellowships (five at the University of Ghana and three at the University of Witwatersrand). Among the **426** Master's students, **206** (48%) are men, **219** (51%) are women and one (1%) is transgender. Of the eight PhD students, one is a woman.

Table 4. Master's scholarships by cohort and university

	Cohort 1		Cohort 2		Cohort 3		Cohort 4		Cohort 5			Cohort 6		TOTAL
University	M	W	M	W	M	W	M	W	M	W	T*	M	W	
BRAC University, Bangladesh	7	4	7	3	5	4	7	6	5	9	1	8	9	75
Universidad de Antioquia, Colombia	6	9	3	6	3	7	6	5			0			45
University of Ghana, Ghana	6	3	5	5	3	3	6	4	9	5	0			49
Indian Institute of Health Management, India	9	5									0			14
Universitas Gadjah Mada, Indonesia	8	8	4	6	3	7	8	7	8	12	0	6	9	86
American University of Beirut, Lebanon	4	5	3	3	1	3	4	2	4	4	0			33
Université Cheikh Anta Diop, Senegal	24	22									0			46
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	46
Total	68	63	29	28	19	28	37	32	35	44	1	18	24	426

	Total
Men	211
Women	216
*Transgender	1

Highlights in 2022

- As of September 2022, 426 people were awarded a Master's scholarship (see Table 4).
- All universities in the second phase of the scheme actively adopted virtual trainings to ensure smooth continuation of the scheme due to COVID-19 pandemic-related social distancing and travel restrictions.
- The Institut de Santé et Développement, Université Cheikh Anta Diop, Senegal and the University of Sciences, Techniques and Technologies, Bamako, Mali were selected to serve students from French-speaking countries in West Africa.

Progress in 2022

Summary of progress in each participating university

1. James P. Grant School of Public Health (JPGSPH), 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 of the public health researchers on IR for the countries of the South-East Asia and Western Asia and Pacific regions. This year, the JPGSPH has also been providing support for the candidates in EMR. Starting with the first cohort in 2016, to date the scheme has recruited six cohorts with a total number of 85 TDR fellows. The fellows of the first five cohorts have already graduated.

- **COHORT SIX:** The sixth cohort comprises nine women and eight men from Bangladesh, Bhutan, India, Myanmar, Nepal, Papua New Guinea, Pakistan and Philippines (having started their public health learning on 23 January 2022). Given the continuation of the COVID-19 pandemic, JPGSPH decided to start the course online, and based on regular monitoring, in July 2022 it was switched to in-person training, with the exception of three students (two from India and one from Pakistan) who continued with hybrid training. The sixth cohort of TDR fellows will graduate on 18 January 2023.

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

The National School of Public Health, University of Antioquia in Colombia offers students from LMICs in Latin America and the Caribbean (LAC) a two-year full-time Master's programme in epidemiology, with content and emphasis on IR. Since 2015, the programme has enrolled four cohorts with 45 students. All the students from the first three cohorts have graduated. The announcement for a call for applications for cohort five (2023–2025) is under way.

- **COHORT FOUR:** The fourth cohort is composed of 11 students (five women and six men) who come from Bolivia, Colombia, Costa Rica, Dominican Republic, Haiti (3), Honduras (2), Mexico and Paraguay. The students commenced their course in August 2021 and are committed to carrying on thesis projects in IR in: tuberculosis (2), malaria (2), dengue (2), leishmaniasis, chagas, scabies, rabies and helminthiasis. This cohort includes participants from two new countries (Mexico and Bolivia) and thesis projects in two new topics (scabies and rabies). They are expected to graduate in 2023.

3. School of Public Health, University of Ghana, Accra

Master's students

- The university offers a 12-month Master's in Public Health (MPH) which 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 five cohorts of Master's students. To date, 49 students have successfully completed their Master's programme. The selection of 13 students for cohort six was finalized in December 2022.

PhD students

- Since programme inception 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 (IIHM)

The School of Public Health at the IIHM 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 were selected in mid-2022 amongst 44 eligible applicants. This included five women and seven men from Afghanistan, Egypt, Nepal, Somalia, Sudan, Tunisia and Yemen and three Indian national students (one woman and two men). The student from Somalia commenced her studies remotely, however after three months her visa was not issued and so she dropped out of the course. Therefore, the total number of international students is 11 (four women and seven men). The first cohort commenced their studies on October 2022.

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

The GMU, in collaboration with TDR, initiated a 24-month Graduate Programme on Public Health, Special Programme of Implementation Research on Tropical Diseases, in December 2015. The programme curriculum consists of participatory teaching methods (mini-lectures, case and field studies) and a course project. To date, 35 alumni (cohorts 1 through 4) from various countries in SEAR and WPR have graduated from this programme. Currently, 35 students in Cohort 5 are finishing their studies.

- **COHORT FIVE:** The fifth cohort consists of 20 students (12 women and eight men) from six countries: Bangladesh, India, Indonesia, Myanmar, Nepal and Timor Leste. The students started the course in September 2021 and will finish in September 2023.
- **COHORT SIX:** The sixth cohort consists of 15 students (nine women and six men) from nine countries: Bangladesh, India, Malaysia, Myanmar, Nepal, Papua New Guinea, Timor Leste, 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, Lebanon

Since 2015, the Faculty of Health Sciences at the American University of Beirut (AUB) has hosted the TDR scholarship scheme, providing full scholarships for an MPH and MSc in Epidemiology to five cohorts of 33 students. All TDR-supported students enrolled in a specially developed three-credit course on IR. All students from cohorts one through four have graduated. Currently there are six students in cohort five enrolled. 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, Palestine, Jordan and Syria. The students started the course in September 2021 and will finish in 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. A Letter of Agreement (LoA) was issued and the call for the first cohort of students was announced in late 2022. The selection of the first cohort will be finalized in early 2023.

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

In early 2021, UCAD was selected to join the Postgraduate Training Scheme, filling a training gap in French-speaking countries.

- **COHORT ONE:** A call for applications from prospective students revealed a great demand from French-speaking candidates in the region. To fill 29 spots, a total of 1682 applications were submitted, among which 1506 were eligible. The 46 selected students (22 women and 24 men) were from 15 countries in sub-Saharan Africa.

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's degree and a 42-month PhD in Implementation Science (IS) to a total of 46 students. Currently, there are 10 students (six women and four men) completing their Master's degree.

Master's students

- **COHORT SIX:** The 2022 academic year commenced with a one-week orientation in January 2022 and the first course commenced 31 January 2022, (See Appendix 2). Courses were hybrid in the first quarter of 2022 which enabled students to join courses online prior to their arrival in Johannesburg. Face-to-face learning commenced in April 2022. All 10 students completed 11 of the 12 modules and took professional development courses October-November 2022. Of the 14 candidates selected and offered scholarships for the 2022–2023 academic year, only 10 enrolled for the programme. This includes four men and six women from Eswatini, Ghana, Kenya, Lesotho, Malawi, Nigeria, the United Republic of Tanzania, Zambia and Zimbabwe. One candidate from Ghana had to withdraw for family reasons, a candidate from the United Republic of Tanzania opted to go for his PhD, a candidate from South Africa opted to enrol for a Master's in Vaccinology, and a candidate from Cameroon opted to do her medical residency programme. All four candidates declined the scholarship at a very late stage and, thus, the university could not replace them.
- **PhD student:** The last PhD student who commenced his studies in February 2018, has successfully completed early 2022.

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

The IR programme is part of a 24-month full-time postgraduate course offered by the School of Public Health, through an MSc in Epidemiology; an MPH in Health Promotion and Education; and an MPH in Public Health, Health Policy and Management. IR methodology and theory are embedded in the Master programmes and provide an opportunity for all postgraduate students to gain skills in IR. 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:** In 2021, the call for applications was announced through the university and TDR websites. Fifty-one eligible applications were received, with 20 candidates shortlisted for interview. A cohort of 15 students started in January 2022 (nine women and six men) from the Democratic Republic of the Congo, Kenya, Malawi, Namibia, Uganda, the United Republic of Tanzania, and Zambia. The students are expected to graduate by December 2023.

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

As described earlier, with the support of the Luxembourg Directorate for Development Cooperation and Humanitarian Affairs, and Germany's Deutsche Gesellschaft für Technische Zusammenarbeit, the Université Cheikh Anta Diop (UCAD) in Dakar, Senegal and the Université des Sciences, des Techniques et des Technologies de Bamako (USSTB), Mali joined in the second phase of TDR's Postgraduate Training Scheme, and additionally serves as a sub-Regional Training Centres for French-speaking countries in sub-Saharan Africa.

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

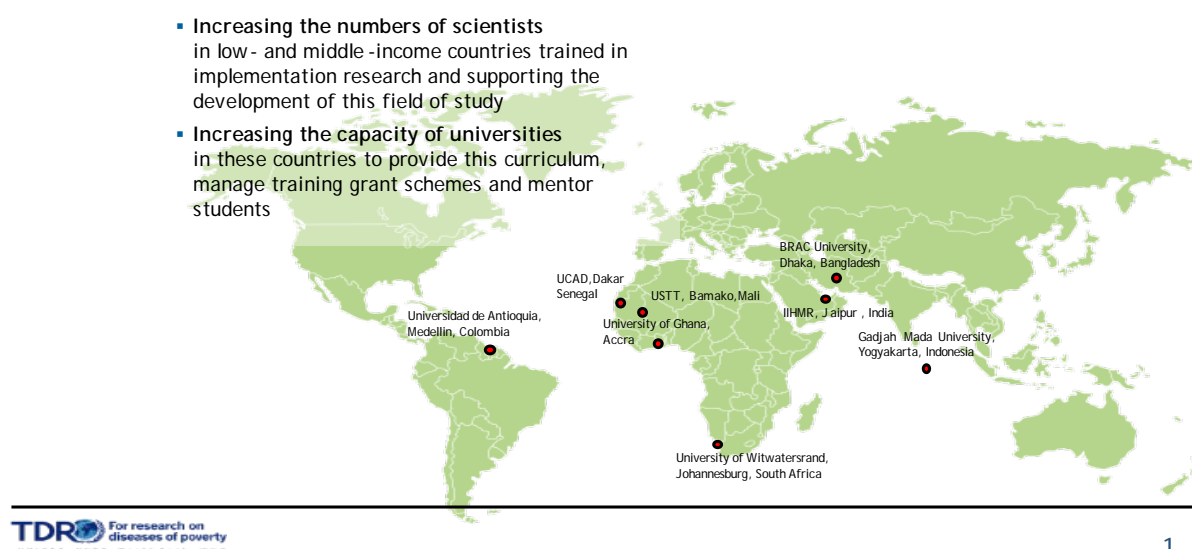


Fig. 3. Universities participating in the second phase of the Postgraduate Training Scheme

Development of an IR core competencies framework

An IR core competencies framework was developed by the UNDP/UNFPA/UNICEF/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP), in collaboration with Johns Hopkins University, and the universities supporting the TDR Postgraduate Training Scheme. The aims of the framework were: i) to address a lack of consistency in curricula for IR training programmes globally; and ii) result in a framework that was especially 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 competencies and sub-competencies at three levels: **level 1** – knowledge of the competencies; **level 2** – limited practical experience applying the knowledge of the competencies; and **level 3** – expert practical experience applying the knowledge of the competencies.

Seven academic LMIC institutions involved in IR training under the RCS and HRP programmes 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 included:

1. Universidade Estadual de Campinas, Brazil
2. National School of Public Health, Universidad de Antioquia, Colombia
3. University of Ghana, Ghana
4. University of Witwatersrand, South Africa
5. School of Public Health, University of Zambia, Zambia
6. Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada, Indonesia
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 is currently being used to address the IR training gaps amongst the universities in the second phase of the scheme. It is anticipated that this exercise will be completed by mid-2023 and the developed curriculum will be available as an online tool for the MPH programmes.

Remaining risks and challenges

The COVID-19 pandemic of 2020 posed a particular challenge to the delivery of MPH training across the seven universities. It was challenging to transfer face-to-face teaching materials into virtual training. It was, however, an opportunity to strengthen capacities in online IR course material development. Because of travel restrictions, students were unable to do field work for their thesis and they were exceptionally encouraged to use secondary data for their thesis.

Contributions towards TDR key performance indicators

Partnerships and collaborations:

As a result of this scheme, RCS developed strong partnerships with the seven universities participating in the scheme and promoted a number of 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, RCS successfully expanded the scheme to include UCAD 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 were institutionalized across the seven universities and all students received relevant training in IR, for example, GMU has TropEd accreditation to facilitate broader international recognition and credit transfers (ECTSs). An IR course was accredited and there are two TropEd students who attended the course in October 2018 (<http://www.troped.org/courses/SPT-FullRecord.php?ResourceId=268>).
- The GMU is also collaborating with the Network of Humanitarian Action (NOHA) Master's Programme. NOHA is an education and training programme that offers an inter-university and multidisciplinary Joint Master's Degree. Since 2018, NOHA has sent nine students to take several courses within this IR programme.

- As a result of participation in the TDR Postgraduate Training Scheme, the University of Witwatersrand has successfully renewed its grant with the John E. Fogarty International Center to train PhD candidates of southern Africa origin. The scheme has also gained visibility among Consortium for Advanced Research Training in Africa (CARTA) fellows as they participate in the IS courses offered by the University of Witwatersrand.
- There has also been increasing recognition of the scheme within WHO programmes, for example, HRP carried out a joint field visit with RCS to review the implementation of a 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. Collaborating institutions have the opportunity to utilize research findings as evidence to influence practice and policy or as a basis for further research.

Gender aspects and vulnerable populations:

RCS 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, RCS reviews and approves the calls prior to publication. The selection process involves consideration of academic merit and geographical and gender equity.

RCS monitors gender distribution among grant applicants and recipients, with the goal of ensuring gender equity across TDR activities. Among the 426 Master's students, 209 (48%) are men and 226 (52%) are women and one (<1%) transgender. Among the eight PhD students seven (87%) are men and one (13%) is a woman. The challenges for women applying to these scholarships are often associated with starting a family.

Ways of promoting gender equity considered by RCS in 2020–2021 included piloting flexible training schemes, such as part-time training for women with families. These efforts should be put in the context of underlying social, cultural and educational factors at country level beyond RCS's control.

In 2022, the universities supporting the 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 was a joint activity between two special programmes housed within WHO: RCS and HRP. The objective of this joint activity was to identify the existing gaps and develop relevant training on sex and gender in health research. By September 2022, the participating universities awarded a cumulative total of 426 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 universities developed capacities to deliver IR courses. UCAD is currently embedding the IR short courses and MOOC within its postgraduate programme before the first cohort of students start their studies in early 2023.
- This participation in the development of an IR core competencies framework has strengthened their network by the exercise of comparing their IR curriculum and exchanging materials.
- An online networking platform was launched in 2020. This platform is managed by the GMU to enhance communications and promote trainings across staff and students across the participating universities.

Publications:

Bartels SM, Haider S, Williams CR, Mazumder Y, Ibisomi L, Alonge O, Theobald S, Bärnighausen T, Escallon JV, Vahedi M, Ramaswamy R, Sarker M. Diversifying Implementation Science: A Global Perspective. *Glob Health Sci Pract.* 2022 Aug 30;10(4):e2100757. doi: 10.9745/GHSP-D-21-00757. PMID: 36041849; PMCID: PMC9426981.

Related news: <https://tdr.who.int/newsroom/news/item/21-02-2022-bench-to-bedside-gets-new-meaning-in-global-south-in-tdr-s-flagship-research-training-programme>

Plans for 2023

- Continue with the issuance of new LoAs for the universities selected for the second phase of the scheme
- Placement of first cohort of MPH students at the University of Sciences, Techniques and Technologies, Bamako, Mali
- Training on IR ethics to be carried out across eight universities
- Continue with development of an online IR Master's programme
- Pilot IR Clinical Research Leadership programme

ER 2.1.4: Advanced training in clinical product development

The CRDF programme is a joint activity of the Gates Foundation and TDR. The goal of this programme is to develop internationally-recognized clinical research leaders in LMICs. Leadership is described as the ability of an individual to “lead” or guide other individuals, teams and institutions. The life cycle of a CRDF round is three years: one year for the selection of fellows, one for fellows’ training at the host institution, and the final year for the fellows’ reintegration back into their home institutions.

Progress in 2022

Results of the 2020–2021 TDR CRDF selection

Eighteen fellows were placed, of whom 10 were women and eight men, in ten training partner organizations (TPOs): DNDi (1); IDDO/WWARN, United Kingdom (3) and Australia (1); GSK-Biologicals (3); European Vaccine Initiative (EVI) (2); Oswaldo Cruz Foundation (FIOCRUZ), Brazil (1); the Luxembourg Institute of Health (3); ISGlobal (1); International Vaccine Institute (IVI), South Korea (2); and the STPHI (1).

Fourteen fellows are from countries in **AFR**: Cameroon (1), Congo (1), Ethiopia (3), Gabon (1); the Gambia (1), Guinea (1), Liberia (1), Madagascar (1), Mozambique (1), Nigeria (1), Uganda (1) and Zambia (1). One fellow is from **AMR** (Argentina), one is from **SEAR** (India) and two are from **EMR** (Sudan). The women fellows are from Argentina, Cameroon, Ethiopia (2), the Gambia, India, Madagascar, Nigeria, Sudan and Uganda. All the fellows were placed between April 2021 and April 2022.

Gender balance and equity plan

Since 2018, suggestions to improve gender balance in the CRDF were incorporated into the calls for applications, such as: providing profiles of women who have taken part in the scheme; mentoring programmes led by previous fellows to help with the application process and nomination of potential fellows; and distribution of the call through social media. The proportion of women applicants increased from 16.7% (11/66) in 2016 to 26% (35/147) in the 2020–2021 selection. As a result of the implementation of suggestions from the challenge contest, in the third selection of fellows in 2020–2021, 41.5% of the candidates interviewed by TPOs were women and 55% of the final candidates were women.

As evidenced above, there are also fewer fellows from countries outside of sub-Saharan Africa. Some TPOs have expressed an interest in building relationships with AMR and SEAR, but pointed out that there were not many candidates applying from these regions. To respond to this challenge, RCS first worked with the WHO regional offices to disseminate the call regionally (via Twitter), highlighting that the scheme is open to candidates outside Africa. As a result, 11 fellows applied from SEAR

(Bangladesh (2), India (3), Indonesia(1), Nepal (3) and Pakistan (2)) seven from EMR (Sudan), and one from AMR (Argentina). Among these, five fellows from India, Pakistan, Sudan (2) and Argentina were interviewed by different TPOs and the fellows from Argentina (1), India (1) and Sudan (2) were selected. Finally, the CRDF at FIOCRUZ, Brazil, was identified as a TPO and trained two fellows (one per year).

Reintegration of the 2019–2020 fellows

All the reintegration plans from the fellows placed in 2019–2020 were developed. In some cases, there were delays due to the COVID-19 pandemic. A total of 632 scientists were trained through different reintegration plans.

Reintegration of the 2021–2022 fellows

Among the 18 fellows placed in 2021, six have already finished their placement and developed their re-entry plan. Capacity-strengthening activities included trainings in key components of clinical research, including protocol development, GCP, GCLP, data management, analysis and statistics and scientific writing. Two reintegration projects were focused on project management skills and one was on establishing a network of institutions working in clinical research in Argentina. Finally, one fellow also concentrated his efforts on pharmacovigilance. Re-entry plans from the other 12 fellows are expected to be completed in 2023.

Follow-up on the impact of the CRDF

The impact of the CRDF scheme at the three levels (individual, institutional and societal) was assessed in collaboration with the Centre for Science and Technology Studies at Leiden University in the Netherlands. RCS reviewed the publications output of the fellows pre- and post-grant, as a proxy of the impact of the fellowship on their career progress.

In summary, around 935 publications were analysed in which all fellows from round one to round seven were co-authored. These included publications output from 2000 to 2019, which were retrieved from the Web of Science and PubMed. Table 5 presents the performance scores and the fellows' publications output before and since the fellowship:

Table 5. CRDF performance scores

	Before fellowship	Since fellowship
Publications output (P)	329	606
MNCS (Scientific Impact factor)	0.95	0.96
Collaboration	0.87	0.94
International collaboration	0.76	0.82
Collaboration with industry	0.09	0.15

The publications output (P) in the funded period is almost twice that prior to the grant. This does not mean that the grantees became more productive since the grant, but rather an artifact of the period of analyses used and the years in which the programme ran. There has been a general trend that the research output increased, even though the scientific impact factor for the publications output has not significantly changed. This could be due to the fact that most publications were in open access journals.

Table 6. Publications output in different research areas

<i>Research area</i>	Number of publications	
	Before fellowship	Since fellowship
Drug discovery	1	5
Basic research	95	143
Pharmacokinetics K study	10	15
Case control study	8	10
Case report	3	3
Clinical trial	59	101
Health system research	152	322
Other	1	7
Total	329	606

Table 6 indicates a general increase in the fellow's publications output since their fellowship. This includes their involvement in both product development and health systems research. Further analysis also shows that most of the research is related to infectious diseases of poverty, malaria, NTDs, TB, HIV and HIV co-infection. There has also been an increasing trend in research related to NTDs and nutrition.

In summary, there have been positive trends in the fellows' career progress in research, in particular clinical trials and health systems research in LMICs. A full analysis and draft manuscript for this work are under way.

Promoting career development through CRDF networking and alumni meeting

Two regional CRDF alumni meetings took place in 2020, one for fellows from AMR and SEAR in Cali, Colombia (2–4 March), the other for fellows from AFR, in Addis Ababa, Ethiopia, (31 March–1 April). Unfortunately, the meeting in Addis Ababa was postponed due to the COVID-19 pandemic, and as a result, RCS organized a series of webinars specifically for CRDF audiences. As the pandemic situation improved, TDR was able to organize an alumni meeting in Cape Town, South Africa, December 2022, with more than 100 fellows, both current and past, attending. The objectives of the meeting were to: i) share the CRDF achievements; ii) present the next phase of the scheme; iii) facilitate networking among previous and current fellows, host institutions and local stakeholders at the national and regional levels; and iv) involve current and former fellows and their home institutions in the Clinical Trial Community Platform.

Development of a curriculum with the skills needed for engaging in research

In partnership with the Global Health Network, RCS developed an essential research skills curriculum study with the objective of identifying what constitutes the minimum set of skills, knowledge and key principles that would enable those with limited or no previous experience to undertake high-quality research for health. This process resulted in a clear curriculum framework in the form of a set of modules that any research group, team or organization can actively use to implement and guide their training programmes (<https://tdr.who.int/publications/i/item/9789240042896>).

This comprehensive study also generated guidance on implementation so that any organization wanting to design or strengthen their training programmes or courses around this curriculum could also benefit from evidence-led recommendations on which approaches will work best in their specific context.

Clinical Trial Operations for Study Coordinators course

The study coordinators course was developed from training tools and resources made available from the Global Health Network, TDR Regional Training Centres, the University of Siena, and other similar institutions. It was supported by the Global Health Clinical Consortium. The course has been delivered three times, in collaboration with the following organizations which have actively participated in its design, delivery, and continuous improvement through a formal M&E framework: Faculty of Capacity Development (FCD), Ireland; Foundation for Innovative New Diagnostics (FIND), Switzerland; Medicines for Malaria Venture at the International University of Geneva, Switzerland; the International AIDS Vaccine Initiative (IAVI), United States; and PATH. In 2021, management of the course was transferred to the Center for Innovative Drug Development and Therapeutic Trials for Africa (CDT-Africa), at the Addis Ababa University. TDR former fellow, Dr Dawit Ejigu, is managing the delivery of the online course. In 2021 and 2022, two rounds of online study coordinator courses were conducted, with participation of at least five TDR fellows in each course.

The Clinical Research Leadership scheme as the next step

The Gates Foundation agreed to support a new programme on Clinical Research Leadership (CRL), built on the experience and evaluation of the 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 last quarter 2023.

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 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.

Despite TDR's active efforts to promote the scheme globally, limited numbers of applications were received from regions other than sub-Saharan Africa. There is a need to explore which alternatives would be more attractive to encourage researchers outside of sub-Saharan Africa to apply to this programme. Identification of local/regional TPOs could be part of the solution.

Contributions towards TDR key performance indicators

Partnerships and collaborations:

The collaborating TPOs which host fellows, was listed earlier (under “results of the 2020–2021 TDR CRDF selection”, p. 18).

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 18 fellows is US\$ 1 117 000.

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/>).

As a result of the implementation of suggestions identified in the challenge contest, during the third selection of fellows in 2020–2021, 41.5% of the identified candidates for interviews with TPOs and 50% of finally selected participants were women (see below scaling-up of CRDF placements).

Training:

The training offered by TPOs is mainly hands-on rather than through a degree course. The 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 capacity building 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:

Casamitjana N, Vahedi M, Davoren S, Kavoura E, Tallada J, Yamaka S, Launois P. Benefits and barriers in a clinical research competency development scheme for low- and middle-income countries. *Glob Health Action*. 2022 Dec 31;15(1):2035504. doi: 10.1080/16549716.2022.2035504. PMID: 35322762; PMCID: PMC8956300. <https://pubmed.ncbi.nlm.nih.gov/35322762/>

Related news:

[Phumla Sinxadi \(who.int\)](#)

[Cherif Mahamoud Sama \(who.int\)](#)

[Paul Sondo \(who.int\)](#)

[Dziedzom Komi de Souza \(who.int\)](#)

[TDR-supported research fellows contribute to RTS,S malaria vaccine development \(who.int\)](#)

ER 2.1.6: Structured capacity building in IR (Renewal of UNDP Access and Delivery Partnership)

The Access to Delivery Partnership (ADP) is a unique collaboration between the WHO, TDR, PATH, the Government of Japan and the United Nations Development Programme (UNDP). Together this partnership leverages expertise within each organization to implement a range of interventions in LMICs that promote equitable, sustainable and timely access to cost-effective and quality-assured new health technologies for TB, malaria and NTDs, as well as advancing UHC and the SDGs.

ADP is a global project that has been implemented over two phases; the initial phase was implemented from 2013–2018, and the ADP scale-up phase from 2018–2023. 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 complimentary range of activities. ADP anticipates another project phase beyond 2023 based on the findings of the ongoing evaluation exercise to inform design and scope.

The implementation of ADP support 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 2022

Bhutan

Bhutan's Ministry of Health, in collaboration with Khesar Gyalpo University of Medical Sciences of Bhutan and the WHO Country Office (WCO), initiated an assessment of the Communicable Disease Division (CDD) for the development of a national action plan for meeting the WHO NTD Roadmap 2021–2030 targets, in particular IR gaps. The assessment will also form the basis for the establishment of an NTDs entity within CDD, which does not exist currently.

Indonesia

The GMU, Centre for Tropical Medicine, Faculty of Medicine, Public Health, and Nursing, in collaboration with the Government's sub-directorates concerned with vector-borne, zoonotic and direct communicable diseases control, have developed a national strategy for IR to support the prevention and control of five diseases: filariasis, helminthiasis, schistosomiasis, leprosy, and yaws, for the years 2022–2026. The IR strategy will guide identification of needs and inform resource allocation for IR activities for the five priority NTDs.

Ghana

The University of Ghana, School of Public Health and its IR partners based in the Government's Ghana Health Service, undertook a comprehensive IR training and mentorship project that included the development of mentorship guidance. The draft guidance is being pilot tested through three IR demonstration projects that were developed and selected for funding as part of the comprehensive IR training and mentorship package. The mentorship guidance will enhance IR knowledge acquisition and application of core competencies.

Malawi

The Ministry of Health's Department of Research, working in conjunction with district health management teams and the Kamuzu University of Health Sciences, conducted a comprehensive IR training and mentorship project that included the development of mentorship guidance and support for demonstration projects. The guidance is being pilot tested and will receive input from the mentor-mentee pairs from the selected projects. It is anticipated that the mentorship guidance will enhance learning experiences for improved acquisition and application of IR skills.

United Republic of Tanzania

The National Institute for Medical Research, and the NTDs Control Programme of the Ministry of Health, as well as regional and district NTDs coordinators, have updated the Tanzania's Master Plan to align with the WHO NTD Roadmap 2021–2030, and as part of the Health Sector Strategic Plan V (2021–2026). The Master Plan will empower NTDs coordinators to mobilize and allocate IR resources, when and where they are needed most.

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 core competencies. To this end, TDR is piloting a small grant approach for IR demonstration projects. In 2022, this approach was pilot tested in Ghana and Malawi and the outcome of this approach will be attained and assessed in 2023.

Contributions towards TDR key performance indicators

Partnerships and collaborations:

The ADP partners (UNDP and PATH) are part of the project implementation team at country level, in addition to their specific and complimentary roles in the 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 collaborators 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:

Apart from the incorporation of the new module on gender and intersectionality analysis into the IR Toolkit, 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, and have gained some knowledge and skills for developing IR proposals to conduct their projects in the context of programme priorities.

Strengthened institutions and/or networks:

The blended virtual workshops and MOOC focused on strengthening IR knowledge and skills of individual researchers. However, it also provided opportunities for the establishment of collaborative interactions and networks among participants and facilitators. The ADP community platform is designed to support such interactions for individuals and teams, including the establishment of mentor-mentee pairings. The advancement of letters of intent to draft IR proposals and selection of demonstration projects, indicates some level of enhanced understanding and application of IR principles.

Leverage created by this project:

The participating institutions enhanced their grant management and reporting capabilities, both technical and financial.

Publications:

The funding of demonstration projects will lead to the publication of research findings emanating from the comprehensive training and mentorship package in 2023 and beyond.

<https://adphealth.org/irtoolkit/intersectional-gender-lens>

Related news:

The launch of the new intersectionality and gender lens module was featured on the TDR website and associated social media channels: [New Toolkit module incorporates an intersectional gender perspective into implementation research projects \(who.int\)](#), and also as part of ADP impact stories on the ADP website: <https://stories.adphealth.org/strengthening-health-systems-through-research>.

Results dissemination and uptake:

Dissemination and uptake have led to the identification and early engagement of all relevant stakeholders and partners, including implementers, policy-makers and communities. Participation from the planning, implementing and dissemination stages of the IR activities and projects ensured ownership of the research findings, as well as utilization to support evidence-based programme practice and policy.

Country reports or research articles were published in local or regional open access peer-reviewed journals to maximize local readership, and where possible, publication in appropriate subject matter open access platforms, e.g. the TDR Gateway.

Plans for 2023

Three priorities for 2023 will be to i) expand the digital enhancement of the ADP community platform, including pilot testing of the self-assessment tool based on IR core competencies; ii) complete the French translation of the intersectional gender lens module and incorporate it into the online IR Toolkit; and iii) expand IR demonstration project grants available to training participants and enhanced use of the mentorship guidance (according to available RCS budget allocations in the next phase (transition 2023–2024) of the ADP project).

RCS will continue to support rollout of IR capacity building, with a focus on delivery of health technologies and mitigating the impact of the COVID-19 pandemic on NTDs prevention, diagnosis, treatment and elimination, in line with the WHO NTD Roadmap (2021–2030).

ER 2.1.7: Strengthening Operational Research capacity in Global Fund supported programmes

Designing and conducting Operational Research (OR) at the local level contributes to finding solutions relevant to the local context for problems associated with infectious diseases of poverty. Despite this potential benefit, and the previous efforts and advocacy for locally-sourced approaches from different stakeholders (including RCS), OR is not always routinely incorporated into control activities funded by GFATM. Due to considerable differences between countries, and between programmes (needs, demands, absorption capacity and funding) structured OR activities have remained minimal. There is an urgent need to provide specific technical support to programmes receiving GFATM grants for: i) developing OR agendas; ii) integrating them into national strategic plans and applications; and iii) prioritizing human and technical research capacity to strengthen local OR capabilities in disease control programmes.

In consultation with 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 components 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, in collaboration of the 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 these applications ensures a continuous opportunity for programmes to undertake OR and to routinely avail technical support to countries submitting or renewing their GFATM grants. This situation augurs well for the establishment of a new Expected Result with modest undesignated funding (UD) allocation that will leverage Global Fund support and has potential to raise designated funding (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 2022

Eswatini

A senior SORT IT alumni and CRDF fellow is currently engaging country programme staff working in HIV/AIDS, malaria and tuberculosis within the MoH and its stakeholders. The aim is to: i) identify critical steps in the strategic plan that promote the integration of OR in GFATM grants; ii) identify the key persons and institutions mandated to make decisions on the OR component of the 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 and 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.

United Republic of Tanzania

As is the case for Eswatini, a senior SORT IT alumnus has initiated stakeholder engagement of GFATM-supported programmes within the country. Based on these engagements, the SORT IT alumni were incorporated into the GFATM application drafting team responsible for the OR component. RCS is tracking progress while providing technical guidance and supporting documents.

Remaining risks and challenges

The main challenge is to overcome the barrier caused by scarcity and low priority of OR within GFATM-supported programmes and country coordination mechanisms. There is a need to synchronize timely technical support with the country's GFATM grant end dates. RCS will continue to provide catalytic and galvanizing support to unlock GFATM resources for countries to undertake OR in priority areas, while demonstrating the scope and value of OR. RCS will also continue to sensitize key stakeholders about the benefits of adopting effective and sustainable OR practices among the many other competing programme priorities.

It is also worth noting that GFATM does not have a policy on OR, except that it is eligible if a country wants to request it (see the M&E module in the Global Fund [modular framework](#)). However, the framework's Resilient and Sustainable Systems for Health (RSSH) module, covering monitoring and evaluation systems, does mention data quality, analyses, evaluations, reviews, and data use as the potential intervention package (pages 52–53 of the framework). The illustrative list of activities in the RSSH module is explicit on a range of operational issues but clearly avoids mentioning “research”.

Contributions towards TDR key performance indicators

Partnerships and collaborations:

External partners are disease control programmes and individual SORT IT alumni at country level. This partnership represents potential added value for the programme in the 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 also 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. Once the grant is approved, they are involved in the project implementation activities, including liaison and advocacy for OR findings uptake among the relevant in-country stakeholders. GFATM grant support for OR provided to programmes constitutes the leverage.

Gender aspects and vulnerable populations:

Apart from the individual SORT IT alumnus and course participants, no gender specific aspects were addressed in the current reporting period. However, it is anticipated that some OR priority proposals could identify vulnerable populations as part of their GFATM grant. In these cases, vulnerable populations may not receive any direct immediate benefit from the OR projects, however, future benefits could be realized after research findings are incorporated into national programme practices and policy.

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 programme participants and personnel will better understand and appreciate the main characteristics of OR. Through this, trainees gain some knowledge and soft skills for advocating for OR components in GFATM grant applications, as well as realizing the importance of incorporating OR into national strategic plans and 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 2022. However, the provision of catalytic UD funding as part of proof of concept will lead to publication of research findings emanating from this opportunity in 2023 and beyond.

Related news: <http://cea-pcmt.org/callforsortit>

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 ownership and utilization of research findings to support evidence-based programme practice and policy.

Country reports or research articles will be published in local or regional open access peer-reviewed journals to maximize local readership, and where possible, publication in relevant open access platforms, e.g. the TDR Gateway.

Plans for 2023

A main priority for 2023 will be to provide technical and UD funding to two SORT IT courses as part of fully integrating OR into national programmes while demonstrating its value and scope.. The other priority will be to publish the revised *Framework for Operational and Implementation Research in Health and Disease Control Programmes*.

Progress summary on previous expected results

None.

Budget and financial implementation

Table 7: Approved Programme Budget 2022–2023 and funds utilized (provisional data)

Expected result	Research Capacity Strengthening (RCS)	Undesignated funding				Designated funding			
		\$40m scenario	\$50m scenario	Revised planned costs Jan 2023	Implementation as at 31 Dec 2022	\$40m scenario	\$50m scenario	Revised planned costs Jan 2023	Implementation as at 31 Dec 2022
		UD	UD	revised UD	UD	DF	DF	revised DF	DF
2.1.1.1	TDR support to regional training centres	1 050 000	1 200 000	1 266 000	715 184	200 000	200 000	754 000	285 369
2.1.2	Targeted research training grants (MSc, PhD)	3 050 000	6 000 000	3 555 000	2 340 028	500 000	700 000	1 051 000	850 059
2.1.4	Career development fellowship grants	0	0	300 000	95 887	1 500 000	1 500 000	2 657 000	926 228
2.1.6	Structured capacity building in IR (ADP Initiative)	0	0	0	62	500 000	500 000	172 000	76 019
2.1.7 (new)	Strengthening OR capacity in Global Fund programmes	50 000	200 000	250 000	223 260	50 000	200 000	0	0
	Total	4 150 000	7 400 000	5 371 000	3 374 422	2 750 000	3 100 000	4 634 000	2 137 675

Table 8: Proposed Programme Budget 2024–2025

Expected result	Research Capacity Strengthening (RCS)	2024-2025					
		\$40m scenario			\$50m scenario		
		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
2.1.2	Targeted research training grants (MSc, PhD)	3 200 000	500 000	3 700 000	6 100 000	700 000	6 800 000
2.1.4	Career development fellowship grants	0	3 000 000	3 000 000	0	3 000 000	3 000 000
2.1.6	Structured capacity building in IR (ADP Initiative)	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
	Total	4 400 000	4 250 000	8 650 000	7 600 000	4 600 000	12 200 000

Projects and activities funded

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Countries involved
A90399	Bakhytkul Sarymsakova	Astana Medical University	Regional training centre in health research	80 000	Kazakhstan
A90402	Nancy Saravia	Centro Internacional de Entrenamiento e Investigaciones Medicas (CIDEIM)	Regional Training Centre in Health Research	79 928	Colombia
A90403	Yodi Mahendradhata	University Gadjah Mada, Yogyakarta	Regional Training Centre in Health Research	80 000	Indonesia
B40101	Phyllis Dako-Gyeke	University of Ghana School of Public Health	Regional Training Centre in Health Research	80 000	Ghana
B40189	Mohammed Samir Boubaker	Institut Pasteur de Tunis	Regional Training Centre in Health Research	76 000	Tunisia
B40323	Carlos Rojas	Universidad De Antioquia	LoA 3 - Agreement with the Universidad de Antioquia to manage TDR-supported Postgraduate Training Scheme	42 636	Colombia
B40439	Nimesh Poudyal	International Vaccine Institute	Alumni Meeting in Cape Town	2 079	Republic of Korea
B60073	Mohammadhanif Shaikh	International Vaccine Institute	Alumni Meeting in Cape Town	1 935	Republic of Korea
B80035	Alonge Olakunle	The Johns Hopkins University	Developing online content for addressing competency gaps in IR training programs.	15 683	USA
B80279	Marcelo Nobile Franco	Takeda Brazil	Re-entry grant	3 000	Brazil
B80330	Christevy Vouvoungui	Fondation congolaise pour la Recherche médicale (FCRM)	Stipend for a year fellowship at IDDO/UK	45 500	Congo
B80330	Christevy Vouvoungui	Fondation congolaise pour la Recherche médicale (FCRM)	Stipend travel rate – part of the fellowship	5 000	Congo
B80330	Francine Ntoui	Fondation congolaise pour la Recherche médicale (FCRM)	Local fees related to the placement of C. Vouvoungui	881	Congo
C00033	Christian Dagenais	Équipe Renard	Tutorials development for a guide on scoping reviews	8 305	Canada

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Countries involved
P20-00013	Malabika Sarker	BRAC University	LoA 5 - Agreement with the BRAC University to manage TDR-supported Postgraduate Training Scheme	36 248	Bangladesh
P20-00016	Carlos Rojas	Universidad De Antioquia	LoA 4 - Agreement with Universidad de Antioquia to manage TDR-supported Postgraduate Training Scheme	43 319	Colombia
P20-00042	Yodi Mahndradhata	Universitas Gadjah Mada	LoA 4 - Agreement with Universitas Gadjah Mada (UGM) to manage TDR-supported Postgraduate Training Scheme	55 493	Indonesia
P20-00043	Jocelyn DeJong	American University Of Beirut	LoA 4 - Agreement with the American University of Beirut (AUB) to manage TDR-supported Postgraduate Training Scheme	64 647	Lebanon
P20-00076	Philippe Guerin	University of Oxford	Alumni Meeting in Cape Town (supervisor of Abdalla M. Abdalla)	925	United Kingdom
P20-00076	Abdalla Munir Abdalla	Institute of Endemic Diseases, University of Khartoum	Stipend for a year placement at IDDO/UK	45 500	Sudan
P20-00076	Abdalla Munir Abdalla	Institute of Endemic Diseases, University of Khartoum	Travel for placement at IDDO/UK	1 628	Sudan
P20-00076	Abdalla Munir Abdalla	Institute of Endemic Diseases, University of Khartoum	Stipend travel rate	5 000	Sudan
P20-00076	Alain Van Noten	Cigna International Health Services	Insurance for Abdalla Munir Abdalla	865	Belgium
P20-00077	Dolores Carrer	Instituto de Investigación Médica Mercedes y Martín Ferreyra	1 month stipend before placement at FIOCRUZ	4 000	Argentina
P20-00077	Dolores Carrer	Instituto de Investigación Médica Mercedes y Martín Ferreyra	Re-entry grant	23 482	Argentina
P20-00077	Dolores Carrer	Instituto de Investigación Médica Mercedes y Martín Ferreyra	Stipend for a placement at FIOCRUZ	37 500	Argentina
P20-00077	Dolores Carrer	Instituto de Investigación Médica Mercedes y Martín Ferreyra	Conference package for fellow	3 000	Argentina

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Countries involved
P20-00079	Rediet Fikru Gebresenbet	Armauer Hansen Research Institute (AHRI)	Insurance coverage when in placement at the SWISS TPH	3 118	Ethiopia
P20-00079	Rediet Fikru Gebresenbet	Armauer Hansen Research Institute (AHRI)	Re-entry grant	23 486	Ethiopia
P20-00079	Monique Vogel	Swiss Tropical and Public Health Institute	Alumni Meeting in Cape Town (Supervisor of Rediet Fikru)	1 773	Switzerland
P20-00082	Hiwot Hailemariam	Institute of Health, Jimma University	Stipend for 6 month extension at GSK-Biologicals	19 200	Ethiopia
P20-00083	Anna Jammeh	Ministry of Health Social Welfare, Epidemiology and Disease Control Unit of the Gambia	Stipend for a placement at GSK-Biologicals	8 000	The Gambia
P20-00083	Anna Jammeh	Ministry of Health Social Welfare, Epidemiology and Disease Control Unit of the Gambia	Excess baggage payment	400	The Gambia
P20-00083	Anna Jammeh	Ministry of Health Social Welfare, Epidemiology and Disease Control Unit of the Gambia	Re-entry grant as part of the fellowship	24 727	The Gambia
P20-00084	Alebachew Kebede	Addis Ababa University	Stipend for the fellowship placement at IDDO/WWARN, Australia	24 000	Ethiopia
P20-00084	Alebachew Kebede	Addis Ababa University	Re-entry grant as part of the Fellowship	15 000	Ethiopia
P20-00085	Adela Ngwewondo	Institute of Medical Research and Medicinal Plants Studies, Ministry of Scientific Research and Innovation, Cameroon	Re-entry grant as part of the fellowship	24 975	Cameroon
P20-00085	Mona Regad	Drugs for Neglected Diseases	Alumni Meeting in Cape Town (supervisor's attendance)	2 209	Switzerland
P20-00086	Masauso Phiri	The University of Zambia, School of Medicine, Dept of Pathology & Microbiology	Conference package as part of the fellowship	3 000	Zambia

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Countries involved
P20-00086	Masauso Phiri	The University of Zambia, School of Medicine, Dept of Pathology & Microbiology	Re-entry grant as par of the fellowship	25 000	Zambia
P20-00087	Antsa Rakotondrandriana	National Malaria Control Program	Conference package as part of the fellowship	3 000	Madagascar
P20-00087	Antsa Rakotondrandriana	National Malaria Control Program	Miscellaneous expenses related to her placement	126	Madagascar
P20-00087	Antsa Rakotondrandriana	National Malaria Control Program	Re-entry grant as per fellowship	24 500	Madagascar
P20-00088	Parveen Shaikh	Dr. D.Y. Patil Institute of Pharmaceutical Sciences & Research	Extension of placement for 3 months at IVI, Seoul	12 000	India
P20-00088	Parveen Shaikh	Dr. D.Y. Patil Institute of Pharmaceutical Sciences & Research	Miscellaneous expenses related to the placement at IVI, Seoul	806	India
P20-00088	Parveen Shaikh	Dr. D.Y. Patil Institute of Pharmaceutical Sciences & Research	Alumni Meeting in Cape Town (travel)	1 934	India
P20-00089	Alain Van Noten	Cigna International Health Services	Insurance coverage for Trokon Yeabah	865	Belgium
P20-00089	Trokon Yeabah	Disease Surveillance Information System Unit, National Public Health Institute of Liberia	Conference package as part of the fellowship	2 572	Liberia
P20-00089	Trokon Yeabah	Disease Surveillance Information System Unit, National Public Health Institute of Liberia	Full stipend for placement at IDDO/UK	50 500	Liberia
P20-00090	Amanda Wanyana	Uganda Virus Research Institute, International AIDS Vaccine Initiative, HIV Vaccine Program	Conference package as part of the fellowship	3 000	Uganda
P20-00090	Amanda Wanyana	Uganda Virus Research Institute, International AIDS Vaccine Initiative, HIV Vaccine Program	Re-entry grant as part of the fellowship placement at IVI, Germany	24 994	Uganda

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Countries involved
P20-00090	Amanda Wanyana	Uganda Virus Research Institute, International AIDS Vaccine Initiative, HIV Vaccine Program	To cover return ticket to home institute at the end of the placement	719	Uganda
P20-00117	Philomena Peter Asaga	National Hospital	Partial payment of the re-entry grant (cross biennium submission)	12 500	Nigeria
P21-00161	Adama Faye	Institute of Health and Development (ISED)	GLOA No1 and Amendment with the Institut de Santé et Développement (ISED), Université Cheikh Anta Diop, to manage TDR-supported Postgraduate Training Scheme	286 014	Senegal
P21-00161	Adama Faye	Institute of Health and Development (ISED)	GLOA No1 and Amendment with the Institut de Santé et Développement (ISED), Université Cheikh Anta Diop, to manage TDR-supported Postgraduate Training Scheme	37 129	Senegal
P21-00172	Adama Faye	Institute of Health and Development Cheikh Anta Diop University, Dakar	Regional Training Centre in Health Research for Francophone African countries in West Africa	18 389	Senegal
P21-00172	Adama Faye	Institute of Health and Development Cheikh Anta Diop University, Dakar	Regional Training Centre in Health Research for Francophone African countries in West Africa	233 843	Senegal
P21-00183	Núria Casamitjana	Barcelona Institute for Global Health	M&E online training course in French & Spanish	38 257	Spain
P21-00192	Daniel Yilma Bogale	Department of Internal Medicine, Jimma University	Conference package as part of the fellowship	3 000	Ethiopia
P21-00205	Elvin H. Geng	Washington University	Development of training materials for COVID-19 vaccination	17 485	United States
P21-00222	Charles Michelo	University of Zambia	LoA 4 - Agreement with University of Zambia to manage TDR-supported Postgraduate Training Scheme	45 425	Zambia
P21-00223	Latifat D.G. Ibisomi	University Of The Witwatersrand Faculty Of Health Sciences	LoA 3 - Agreement with the University of the Witwatersrand to manage TDR-supported Postgraduate Training Scheme	42 855	South Africa
P21-00244	Moussa Sidibé	STH Project, Sightsavers, Guinea Branch	Conference package as part of the fellowship	3 000	Guinea

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Countries involved
P21-00244	Moussa Sidibé	STH Project, Sightsavers, Guinea Branch	Re-entry grant as part of the fellowship	25 000	Guinea
P21-00244	Moussa Sidibé	STH Project, Sightsavers, Guinea Branch	Partial stipend payment (cross biennium)	24 000	Guinea
P21-00245	Nifarta Andrew	Institute of Human Virology Nigeria	Conference package as part of the fellowship	3 000	Nigeria
P21-00245	Nifarta Andrew	Institute of Human Virology Nigeria	Excess baggage	400	Nigeria
P21-00248	Noé M'Bondoukwé	Department of Parasitology-Mycology of Tropical Medicine, Faculty of Medicine and Health Sciences, Libreville	Full stipend for one year placement at LIH, Luxembourg	50 500	Gabon
P21-00248	Alain Van Noten	Cigna International Health Services	Insurance coverage for Noé M'bondoukwé	548	Belgium
P21-00305	Paul Erasto Kazyoba	National Institute For Medical Research	Strengthening capacity of the NTDCP to adopt and implement the new WHO road map for NTD 2021-2030.	11 028	Tanzania
P21-00309	Dzinkambani Kambalame	National Health Sciences Research Committee	Letter of Agreement with the Research department of Ministry of Health Malawi for Comprehensive Implementation Research and Mentorship Training Project (UNDP ADP)	12 464	Malawi
P21-00321	Yodi Mahendradhata	Gadjah Mada University, Yogyakarta	MOOC grant scheme on IR	57 540	Indonesia
P21-00323	Edith Certain	N/A	Management of the MOOC	17 150	France
P21-00324	Julius Fobil	School Of Public Health Main Account	Comprehensive Implementation Research and Mentorship Training Project.	12 996	Ghana
P21-00330	Ova Emalia	Pusat Kedokteran Tropis Fakultas Kedokteran Kesehatan Masyarakat Dan Keperawatan Ugm	Development of the Indonesian National NTD Roadmap 2021-2025.	8 569	Indonesia
P21-00419	Wafa Kammoun	Institut Pasteur de Tunis	Management of the MOOC session in Arabic	3 000	Tunisia
P21-00426	Adanna Nwameme	University of Ghana School of Public Health	Management of the MOOC on gender & intersectionality	2 850	Ghana
P21-00426	Adanna Nwameme	University of Ghana School of Public Health	Management of sessions of the MOOC	22 500	Ghana

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Countries involved
P21-00449	Dzinkambani Kambalame	National Health Sciences Research Committee	Strengthening capacity of the NTDCP to align and implement the new WHO NTDs roadmap (2021-2030).	10 986	Malawi
P21-00453	Ratchanekorn Wutirat	Inis Communication Ltd	Design, development and deployment of a digital version of IR Toolkit	6 402	United Kingdom
P21-00475	Elaine Fletcher	Global Policy Reporting Association	Supported Series – TDR Postgraduate Training Scheme.	3 755	Switzerland
P21-00476	Debashree Majumdar	N/A	Editing of the publication “Developing an Evidence-led Essential Skills Training Curriculum”	1 750	Switzerland
P21-00489	Jackeline Alger	Hospital Escuela, Tegucigalpa	MOOC video recording	6 375	Honduras
P21-00521	Uche Amazigo		MOOC video recording on community engagement	4 550	Nigeria
P21-00557	Michael Penkunas	N/A	Consultancy to support the IR online training courses	42 500	United States
P22-00561	Carlos Rojas	Universidad De Antioquia	LOA No 5 - Agreement with Universidad de Antioquia to manage TDR-supported Postgraduate Training Scheme	446 244	Colombia
P22-00562	Hu Felix Ankomah Asante	University Of Ghana	LOA No 4 - Agreement with University of Ghana to manage TDR supported Postgraduate Training Scheme	357 588	Ghana
P22-00563	Vivek Bhandri	lihm University Jaipur	LOA No 1 - Agreement with the Indian Institute of Health Management Research to manage TDR supported Postgraduate Training Scheme	363 413	India
P22-00566	Malabika Sarker	Brac University	LOA No 6 - Agreement with BRAC University to manage TDR supported Postgraduate Training Scheme	351 670	Bangladesh
P22-00567	Yodi Mahndradhata	Universitas Gadjah Mada	LOA 5 - Agreement with Universitas Gadjah Mada (UGM) to manage TDR-supported Postgraduate Training Scheme	455 840	Indonesia
P22-00585	Jessie Evans	SCIRES Literature LLC	Publication “How IR could increase...”	1 550	United States
P22-00597	Núria Casamitjana	Barcelona Institute for Global Health	Train-the-trainers of the online MERCSA course	57 218	Spain

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Countries involved
P22-00597	Sara Yamaka	Barcelona Institute for Global Health	Development of a mentorship programme for self-study plan to fellows	9 492	Spain
P22-00600	Ahmad Wastiq Maula	N/A	Data management and statistical analysis	20 000	Indonesia
P22-00601	BMJ Publishing Group	BMJ	Publication of an article on “Evaluation results of IR MOOC”	2 008	United Kingdom
P22-00612	Alain Van Noten	Cigna International Health Services	Insurance coverage for Mona Awadalla Osman	549	Belgium
P22-00612	Mona Awadalla A. Osman	University of Medical Sciences & Technology, Khartoum	Stipend payment as part of the placement at GSK-Biologicals	35 900	Sudan
P22-00612	Mona Awadalla A. Osman	University of Medical Sciences & Technology, Khartoum	Stipend travel rate as part of the fellowship	5 000	Sudan
P22-00615	Niang Khadim		Network on IR for French-speaking countries in sub-Saharan Africa	9 800	Senegal
P22-00617	Naima Reza	N/A	Creation of CRDF profiles	8 901	United Kingdom
P22-00618	Wafa Kammoun	Institut Pasteur de Tunis	Support to ISED/UCAD RTC to institutionalize the TDR toolkit	12 450	Tunisia
P22-00620	Wafa Kammoun	Institut Pasteur de Tunis	To provide support with translation of IR toolkit and PPT slides	7 500	Tunisia
P22-00620	Wafa Kammoun	Institut Pasteur de Tunis	Management of 2 workshops for French-speaking institutions in Africa	7 500	Tunisia
P22-00621	Welile Sikhondze	Sikhondze, Welile	To provide technical expertise for undertaking operational research and capacity strengthening embedded within disease control programmes receiving Global Fund (GF) grants in Eswatini.	7 250	Swaziland
P22-00631	Bella Ross	N/A	Evaluation of the TDR MOOC sessions (English/French/Spanish)	7 200	Australia

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Countries involved
P22-00644	Mbazi Senkoro	Senkoro, Mbazi Fikeni	To provide technical expertise for undertaking operational research and capacity strengthening embedded within disease control programmes receiving Global Fund (GF) grants in Tanzania.	7 250	Tanzania
P22-00657	Esteban Baus Carrera	N/A	Development of 2 MOOC modules and writing of a storyboard/scripts and videos	41 810	Ecuador
P22-00659	Amadou Seck	GIE West and Centre African Bioinformatics (GIE WCA BIOINF)	Data management course at the University Cheikh Anta Diop	24 000	Senegal
P22-00679	Janet Neubecker	N/A	Editing of the MOOC in English	271	Switzerland
P22-00705	Gavin Lucas	Lucas, Gavin James	To provide technical expertise for conducting training courses on scientific writings.	12 152	Spain
P22-00708	Lara Gautier	N/A	Review of a MOOC module on mixed research methods	1 200	Canada
P22-00713	Lagoon Beach Hotel & Conference	N/A	Conference facility for the CRDF Alumni Meeting in Cape Town	52 190	South Africa
P22-00715	Leul Mekonnen	Spotlight Communications & Marketing PLC	Recording of 2 new MOOC modules	9 968	Ethiopia
P22-00742	Julius Fobil	School Of Public Health Main Account	Piloting Implementation Research Mentorship Guidance Project	24 000	Ghana
P22-00743	Gilbert Abiio	N/A	Review of the MOOC module on qualitative methods	1 600	Ghana
P22-00744	Wafa Kammoun	Institut Pasteur de Tunis	Management of the MOOC on IR for the Eastern Mediterranean region	4 000	Tunisia
P22-00789	Sara Yamaka	Barcelona Institute for Global Health	Article publishing "Benefits & barriers in a clinical research competency development scheme for LIMICS"	1 426	Spain
P22-00803	Valerie Louis	N/A	Review of French translation of the MOOC module on ethics	2 500	Germany

Project ID	Principal investigator	Supplier name (Institution)	Project title	Funding in US\$	Countries involved
P22-00806	Carsten Richter	PCC Consulting GmbH	Development of a module on One Health as part of the online IT Toolkit	24 960	Germany
P22-00817	Pana Scott	N/A	Qualitative analysis of the survey for Evaluation the MOOC sessions (English/Spanish)	5 000	United States
P22-00818	Wafa Kammoun	Institut Pasteur de Tunis	Qualitative analysis of the survey for the evaluation of the MOOC sessions in French	5 000	Tunisia
P22-00832	Rose Kosgei	University Of Nairobi	Structured Operational Research and Training Initiative (SORT IT) on retrospective review of national malaria control program routine data 2022 – 2023.	99 490	Kenya
P22-00838	Alexandre Delamou	Centre d'excellence Africain pour la Prevention et le Contrôle de Maladies Transmissible (Cea-Pcmt/Fsts/Uganc)	Structured Operational Research and Training Initiative (SORT IT) on Malaria, Tuberculosis and HIV/AIDS in Guinea	92 994	Guinea
P22-00845	Doumbia	Faculte de Medecine et d'odontostomatologie	GLOA 1 with the University of Sciences, Techniques and Sciences of Bamako, Mali to manage the TDR - supported Post Graduate Scheme.	621 674	Mali
P22-00846	Sara Yamaka	Barcelona Institute for Global Health	Train-the-trainers workshop	13 270	Spain
P22-00847	Alexandre Delamou	Ste Africa Health Consulting Sarlu	Translation of IR Toolkit gender module content to French	2 000	Guinea
P22-00869	Ratchanekorn Wutirat	Inis Communication Ltd	Design and incorporation of French version of gender module on the online IR TK	10 377	United Kingdom
P22-00875	Anani Badje	Badje, Anani Dodzi**Trl209539	Incorporation of operational research component in Global Fund applications by GF-supported programs in Côte d'Ivoire	8 250	Côte d'Ivoire

TDR funding in 2022

CONTRIBUTOR	
Core contributors	Amount (US\$)
Belgium	681 044
China	55 000
Germany	981 595
India	55 000
Japan	50 000
Luxembourg	1 155 462
Malaysia	25 000
Mexico	10 000
Nigeria (1)	400 000
Norway	306 341
Panama	7 000
Spain (2)	159 744
Sweden	3 220 540
Switzerland	1 925 255
Thailand	44 924
United Kingdom of Great Britain and Northern Ireland	5 370 224
World Health Organization	1 900 000
Subtotal	16 347 129
Contributors providing project-specific funding	Amount (US\$)
Bill & Melinda Gates Foundation	1 600 620
Luxembourg	413 340
Medicines Development for Global Health Limited (MDGH)	47 281
National Institute of Health Research (NIHR), United Kingdom	1 969 580
Robert Koch Institute (RKI)	419 023
Sweden	706 549
Swiss Development Cooperation Agency (SDC/DDC)	11 583
United Nations Development Programme (UNDP)	405 000
United States Agency for International Development (USAID)	987 274
World Health Organization	880 403
Subtotal	7 440 653
Total contributions	23 787 782

1. The contribution from the Government of Nigeria for the period 2015 to 2020 was reported in the 2021 Annual Report but will be reported in the certified financial statement in 2022 due to the timing of its receipt. The contribution for 2023 will also be reported in the 2022 certified financial statement due to
2. The contribution from the Government of Spain for the year 2022 will be reported in the certified financial statement in 2023 due to the timing of its receipt.

Scientific Working Group summary recommendations list

ER 2.1.1. Regional Training Centres supported by TDR

- SWG recommended asking MOOC on Implementation Research participants whether they would like their proposal from the final assignment to be considered for funding.
- SWG recommended considering different options for adding new MOOC modules by either splitting the course into basic and advanced or developing a modular format.

ER 2.1.2 Postgraduate Training Scheme

- SWG recommended continuing support to Postgraduate Training Scheme (PGTS) activities in the 2022–2023 workplan.
- SWG supported the development of an online Masters' on Implementation Research and agreed to provide input, as well as being part of the course development process.

IR Leadership Programme in Implementation Research

- SWG agreed that this is an important initiative and that the focus on leadership development could be a value-added to TDR.
- SWG recommended exploring opportunities with institutions providing similar programmes, such as the African Academy of Sciences and the European and Developing Countries Clinical Trials Partnership.
- SWG highlighted the importance of selecting institutions to host postdoctoral researchers and that an essential prerequisite should be established for collaborative research programmes and robust stakeholder engagement to ensure that IR research outcomes can have an impact on policy, practice and service delivery. The capacity of LMIC institutions to supervise postdoctoral studies should be assessed, as well as ensuring that time can be dedicated to research.
- SWG agreed to provide input as well as being part of the IR postdoctoral development process.

ER 2.1.4 Clinical Research and Development Fellowship (CRDF) programme

- SWG suggested continuing to promote retention of trainees in disease-endemic countries.
- SWG recommended caution when considering decentralization of the scheme to an institution in an LMIC, as many components of grant management skills, including financial management, still require strengthening. It is also important to consider context, as this varies significantly across LMICs.

ER 2.1.6 Access and Delivery Partnership (ADP)

- SWG recommended exploring opportunities to engage the RTCs and their trainers in the ADP IR training activities.

Priority areas and budget allocation for 2022–2023 workplan

- SWG agreed with the prioritization of training activities – the Postgraduate Training Scheme, the online Master's degree on IR, and postdoctoral studies on IR. It also highlighted the importance of having a budget line for the online Master's on IR to ensure that progress can be achieved in a timely manner.
- SWG highlighted the importance of having resources to strengthen digital platforms, tools and technical capacity to facilitate virtual learning.